# AGRICULTURAL COMMERCE

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## THE ORGANIZATION OF AMERICAN COMMERCE IN AGRICULTURAL COMMODITIES

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TO

MY WIFE

IN APPRECIATION OF HER
ASSISTANCE IN THE PREP-
ARATION OF THIS VOLUME

# PREFACE

The purpose of this volume is to describe the commerce of the United States in agricultural products, special attention being given to those phases of trade organization which have to do with the distribution of farm commodities from producer to consumer. Its scope is more fully outlined in Chapter I. It is especially designed to serve as a textbook for colleges and universities, much of the information contained in it having been compiled for use in a course dealing with the Organization of American Commerce, which the author has conducted at the University of Pennsylvania since 1908.

I desire to acknowledge with many thanks my obligations to the various state and federal government officials and officials of grain, cotton and other exchanges, elevator, insurance, grain dealing and other business concerns which have courteously provided me with forms and other information.

I wish especially to thank Dr. Emory R. Johnson, Professor of Transportation and Commerce at the University of Pennsylvania, for reading the proof of the volume and offering many valuable suggestions during the course of its preparation. I am also indebted to my brother, Dr. S. S. Huebner, Professor of Insurance and Commerce, University of Pennsylvania, for suggestions concerning the chapters dealing with insurance and speculation, and to Mr. Robert Riegel, Instructor in Insurance and Commerce, University of Pennsylvania, for assistance in proofreading and for preparing the index.

GROVER G. HUEBNER.

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# AGRICULTURAL COMMERCE

## CHAPTER I

### INTRODUCTION: DEFINITIONS AND SCOPE

**Production and Distribution Distinguished.**—In agriculture as in other industries production and commercial distribution, although closely interrelated, are essentially distinct processes. The former has reference to the growth of the country's farm products; the latter to their sale and distribution from the grower to the consumer. So clearly has this distinction been maintained in the farming industries that for many years the term "agriculture," in the absence of specific definition, was generally synonymous with agricultural "production." Gradually, however, it is being realized that agriculture depends as much upon the successful commercial distribution of the crops as upon their successful production. Many growers confine their activities largely to the production of farm products; others, in addition, pay much attention to the marketing of their crops; and there are many dealers, transportation agencies, warehousemen, and other trade interests engaged in the distribution of farm commodities, whose activities are purely commercial. No matter by whom these services are performed, the production and the distribution of farm products are separate services and both are of unquestioned importance.

In discussing the commerce in farm products it is not necessary to deal with soils, seed selection, planting, cultivation, fertilizers, crop rotation, farm labor, production costs, crop pests and animal diseases, harvesting methods, feeding, livestock breeding, farm machinery, land rents and similar

phases of agriculture; for such matters constitute agricultural production. They need to be mentioned only in so far as they exert an indirect influence upon agricultural prices. Subsequent chapters will be confined exclusively to the commercial phases of agriculture.

**Commerce Defined.**—Various terms are almost indiscriminately applied to the distribution of products from producer to consumer. Some refer to it as "commercial distribution," some prefer "marketing," and others "commerce." Any of these terms readily lends itself to the following concise definition of commerce: "Commerce consists of the exchange of commodities between separated localities—it is the agency by means of which consumer and producer are brought together. The process involves the sale and purchase of goods, their transmission from the seller to the buyer, and the settlement of business accounts."[1] Whatever term is preferred in describing the commercial phases of agriculture, it is essential to interpret its meaning broadly so as to exclude all those which are primarily related to the production or growth of farm products and to include all those which have to do with their distribution from grower to consumer.

**Study of Commerce in Agricultural Products Subdivided.**—In order to facilitate discussion the study of the commerce in farm products may be subdivided as follows:

1. The geographical location of producing districts, including a statement of the volume and value of crops produced and the proportion reaching the country's markets.

2. The location and classification of different types of agricultural markets, competition within and between markets, and market conditions or influences.

3. The trade organization or methods of purchase and sale, including a description of (a) the various kinds or groups of buyers and sellers, (b) their methods of buying and selling, (c) the organization and functions of exchanges, (d) the uses and workings of warehouses, elevators, yards or market-places where farm products may be stored or marketed, and (e) coöperative trade activities of growers.

[1] E. R. Johnson: American Railway Transportation, p. 4.

4. The transportation or shipping organization, including the hauling of farm products from farm to local market or shipping point, and their transportation from local points to more distant domestic and foreign markets, over rail and water transportation routes.

5. The inspection, classification and grading of farm products.

6. The control or regulation of commercial distribution by public authorities and by organized exchanges, boards of trade or other commercial bodies.

7. The relationship between speculation and the trade in farm commodities.

8. The collection and dissemination of trade information.

9. Local wholesale and retail agricultural prices, price factors or influences, and methods of determining and quoting prices.

10. The cost incurred in the commercial distribution of agricultural crops.

11. The relationship between insurance and the commerce in farm commodities.

12. The financing of the agricultural crops.

The transportation or shipping service mentioned above is one of the most important parts of the entire machinery of commerce as a whole, but as it has been described elsewhere in great detail,[1] it is not intended to discuss in this volume the methods of making freight rates, general transportation services, or transportation as an industry. It is essential, however, to include various phases of transportation, such as the relation of freight charges to marketing costs, trade profits, and prices; rail and water routes for particular crops;

[1] *See* especially E. R. Johnson and G. G. Huebner: Railroad Traffic and Rates (1911); E. R. Johnson: American Railway Transportation (1908); W. Z. Ripley: Railroad Rates and Regulation (1912); Logan McPherson: Railroad Freight Rates (1909); W. A. Trimpe: Freight Claims (1913); J. F. Morton: Routing Freight Shipments (1913); E. R. Dewsnup: Freight Classification (1913); E. R. Johnson: Ocean and Inland Water Transportation (1906); B. O. Hough; Ocean Traffic and Trade (1914); and House Committee on the Merchant Marine and Fisheries, Steamship Agreements and Affiliations, Vol. iv (1914).

in-transit, reconsignment or diversion privileges; specialized equipment; various special transportation services and practices; and the costs of hauling the crop from the farms to local markets or shipping points.

**Plan of Treatment.**—A certain degree of uniformity prevails throughout the commercial distribution of the various crops, thus facilitating the general description of many of the above-mentioned subdivisions. In some respects, however, there is such wide divergence in practice that the detailed study of commerce in selected commodities becomes essential. Various phases of commercial distribution are discussed in subsequent chapters, for the agricultural crops as a whole, while at the same time special chapters contain descriptions of the commerce in the cereals and in cotton, livestock, wool, leaf tobacco, and fruit. These particular crops were selected because of their great volume and because they are of special importance from the standpoint of trade methods or commercial organization.

The country's crops of hay and forage, farm dairy products and eggs likewise have a huge money value, but they are less typical of agricultural trade methods because a large proportion of these groups is retained for consumption on the farms, a smaller share reaches the great wholesale markets for systematic organized distribution, and the huge local trade in them does not require detailed description. Vegetables are also an agricultural crop of vast importance, but the manner in which the commerce in most of them is conducted is so like that which prevails in the fruit trade that separate description of both is scarcely warranted in a volume of limited space.[1] Dressed meat and meat products produced on the farms, as distinguished from livestock, require but brief mention, for most of them are either consumed on the farms or are sold in nearby markets for local consumption.

**General Classification of Agricultural Crops.**—Although the commerce in farm products is directly concerned only with those which actually reach the agricultural markets, it is indirectly concerned with the total crops annually produced. The

[1] The Marketing of Fruit, chap. xi.

entire volume of the country's crops cannot be stated in a single aggregate because they comprise a wide variety of products which are not measured by a common unit or standard. It is also difficult to estimate accurately their entire net value. So much grain, for example, is fed to livestock and poultry that an addition of the values of grains, livestock on farms, country dairy products and eggs would merely result in a gross value containing flagrant duplications. The United States Census Office in its latest report has attempted no statement of an aggregate net volume or value, but confined its returns to a separate description of three leading groups of farm products. A brief review of the latest census returns will serve as a general measure of the vastness of the agricultural trades. Official statistics showing the value and volume of most of the country's crops are available for later years and many are presented in subsequent chapters, but complete returns including all farm commodities are not currently compiled.[1]

*1. The Primary Crops.*—The term "crops" as used in the census returns includes only the cereals, hay and forage, cotton, leaf tobacco, vegetables, fruits and other commodities included in Table No. I. These products are often referred to as the "primary crops," because they are fundamental and constitute the basis for most of the remaining farm products. The value of all the primary crops of the United States in the census year 1909 was reported to be $5,487,000,000—a per capita value of nearly $60. Their total value was 83.1 per cent. in excess of what it had been a decade earlier, but this was due mainly to an increase of 66.4 per cent. in their average price. On the basis of the prices which ruled in 1899 the value of these crops in 1909 would have been but 10 per cent. higher than it was a decade earlier, and this represents the real advance in primary crop production.[2]

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[1] *See* U. S. Department of Agriculture, Year Books (1910-1912); U. S. Bureau of Crop Estimates (Formerly Bureau of Statistics), Farmers' Bulletins Nos. 570, 575, 584, 629, 651, 665; U. S. Census Office Bulletins Nos. 125, 128.

[2] Thirteenth U. S. Census, Agriculture, vol. v, p. 536.

TABLE I

TOTAL VALUE OF PRIMARY AGRICULTURAL CROPS*

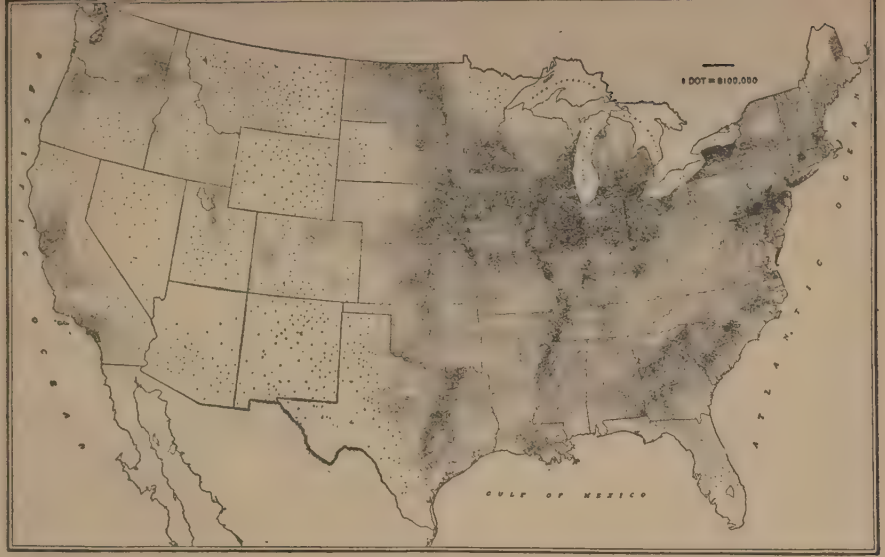
| Crop | 1909 | 1899 | Per Cent. Increase |
|---|---|---|---|
| Cereals | $2,665,539,714 | $1,482,603,049 | 79.8 |
| Cotton and cottonseed | 824,696,287 | 370,708,746 | 122.5 |
| Hay and forage | 824,004,877 | 484,254,703 | 70.2 |
| Vegetables | 418,110,154 | 238,531,761 | 75.3 |
| Fruits and nuts | 222,024,216 | 133,048,721 | 66.9 |
| Forest products of farms | 195,306,283 | 109,864,774 | 77.8 |
| Leaf tobacco | 104,302,856 | 56,987,902 | 83.0 |
| Minor grains and seeds | 97,536,085 | 51,626,538 | 88.9 |
| Sugar crops | 61,648,942 | 32,604,689 | 89.1 |
| Flowers and plants | 34,872,329 | 18,758,864 | 85.9 |
| Nursery products | 21,050,822 | 10,123,873 | 107.9 |
| Other minor crops (hemp, hops, etc.) | 18,068,658 | 9,590,792 | 88.4 |
| Total | $5,487,161,223 | $2,998,704,412 | 83.0 |

* (Thirteenth U. S. Census 1910, Agriculture, vol. v, p. 532.)

The value of the primary crops in different parts of the United States is graphically shown in Map No. I.

A large proportion of many of these crops enters the commerce of the United States, not directly, but indirectly in the form of cattle, sheep, hogs, horses, and other farm animals; and poultry, eggs, country butter, milk, cream, and other country dairy products. A portion is also retained locally for final consumption and for seed. In 1914, for example, 39.3 per cent. of the wheat crop was not shipped out of the counties in which it was grown and similar proportions for other leading primary crops were as follows: corn 81.4 per cent., oats 80.6 per cent., and barley 54.9 per cent. Corn, oats, barley and hay are commonly known as the "feed crops" and the United States Bureau of Crop Estimates has stated that during the five years ending in 1914, 85.6, 72, 47 and 83 per cent. respectively were used on farms for food and seed purposes.[1] In the case of some primary crops, however, such as cotton and leaf tobacco, but little is retained locally, the

[1] Farmers' Bulletin, No. 629, p. 8.




Thirteenth Census of U. S., 1910.—Department of Commerce, Bureau of the Census.

amount entering the channel of commerce being almost equal to the total crop produced.

*2. Livestock on Farms.*—A second group of agricultural products consists of "livestock on farms," the total value of which on April 15, 1910, was placed at $4,925,000,000.[1] Horses valued at over two billion dollars constituted the largest item in this huge aggregate, yet they are usually of less importance in the livestock markets than the meat-producing animals because vast numbers of them are raised for use on the farms rather than for sale in distant markets. Many horses and also mules are sold in the livestock markets throughout the United States but the commerce in livestock is principally dependent upon beef cattle, hogs and sheep.[2] The total value of all the domestic animals sold during the census year 1909, exclusive of those slaughtered on farms, was $1,563,000,000. The census returns also include poultry, the value of fowls on the country's farms on April 15, 1910, being placed at $154,663,000 and the value of the total number raised in the census year 1909 at $202,506,000. Livestock on farms constitutes mainly a secondary agricultural crop for it is in a large measure dependent upon the primary crops for its food supply. The geographical distribution of its total value is graphically shown in Map No. II.

*3. Animal Products Produced on Farms.*—A third important group of agricultural crops—also secondary—consists of livestock products produced on farms. The total annual value of the country's dairy products exclusive of milk and cream consumed on the farms exceeds $600,000,000. Their combined value in the census year 1909 was reported to be $596,413,000, including milk sales to the extent of $252,400,000, country butter valued at $222,800,000, butter fat in terms of which much milk and cream are sold to cheese and butter factories amounting to $82,300,000, sales of cream amounting to $32,600,000 and smaller amounts of country-made cheese.[3] Butter, cheese and condensed milk valued at

[1] Thirteenth U. S. Census, Agriculture, vol. v, p. 327.

[2] *See* chaps. viii, ix.

[3] Thirteenth U. S. Census, Agriculture, vol. v, p. 474.

MAP II.—VALUE OF DOMESTIC ANIMALS ON FARMS.

Thirteenth Census of U. S., 1910.—Department of Commerce, Bureau of the Census.

$274,500,000, moreover, were produced in factories, but such dairy products are virtually manufactures and are marketed differently from agricultural products. Other livestock products of great importance in the commerce of the United States are eggs, which were in the census year 1909 valued at $306,689,000, meat animals slaughtered on farms valued at $270,239,000, wool and mohair at $66,374,000, and honey and wax at nearly $6,000,000.

**Foreign Commerce in Farm Products.**—While the commerce in American farm products is mainly domestic they also constitute the basis for a huge export trade, and although the United States is the world's leading agricultural country, astoundingly large quantities of farm products are imported from abroad. In 1913 the agricultural exports of the United States, including prepared foodstuffs derived from farm products, were valued at $1,123,000,000, and agricultural commodities valued at $815,000,000 were imported from foreign countries. Few phases of the commerce in the agricultural crops are of greater interest than the developments which are taking place in the country's international trade.[1]

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[1] *See* chap. xviii.

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* References designated by * apply also to chap. ii.

## CHAPTER II

### CLASSIFICATION OF AGRICULTURAL MARKETS AND MARKETING PROCESSES

The number of trade interests engaged in the distribution of the agricultural crops of the United States is so large, their marketing conditions so diverse, and the area throughout which they are produced and distributed so extensive that no all-inclusive system of agricultural markets and of trade organization has been universally adopted. Yet the various agricultural trades have much in common, and, subject to certain exceptions, a general system of markets and general marketing processes are traceable.

#### Classification of Agricultural Markets

In their flow from grower to consumer, agricultural commodities usually pass through one or more of four types of markets: (1) the growers' local market, (2) the central wholesale market, (3) the secondary wholesale market, and (4) the retail market. In many instances commodities pass through the entire system or chain of markets while in others the distribution is more direct.

The actual markets of these various types are located at different points, and some are important general markets for many crops while others are of special importance in the marketing of but a single farm commodity. The principal markets for numerous farm products will be described later in dealing with the trade in particular crops.

**Growers' Local Markets.**—Although the growers of agricultural products frequently ship their crops direct to large central markets, so many sell to local buyers that thousands of

ocal markets have sprung up throughout the farming dis-icts. These markets are the places of business of vast num-ers of local dealers of many types who stand between the armers and the primary and secondary markets, and also of umerous local retailers and consumers who purchase for ocal consumption. They are the homes of thousands of local rain elevators, warehouses, cotton gins, cotton yards, stock-ards, fruit, produce and leaf tobacco packing houses, stores nd other local mercantile establishments.

The functions of the growers' local markets vary with the ature of the commodity handled, whether the article is pur-hased for shipment to outside markets or for local consump-on. They also vary with local trade conditions, but may be enerally summarized as follows:

1. Growers' local markets are a medium for gathering or llecting large quantities of farm products from the pro-ucers.

2. They provide convenient, nearby wholesale markets r growers who do not desire or are unable to ship direct to e larger outside markets.

3. They facilitate shipment to outside markets by pro-ding the necessary elevation and loading facilities and con-ntrating purchases until carload lots are obtained.

4. They frequently serve as temporary storage places.

5. They facilitate the initial grading, inspection, weigh-g, packing or other preparation of many farm products fore they arrive at the central markets.

6. In some instances they serve as local retail markets r growers who are frequently able to sell a portion of their ops to local retailers and consumers.

**Central Wholesale Markets.**—One of the distinguishing atures of the agricultural trade organization is that a large rtion of the country's crops is concentrated in great central arkets before it is finally sold for consumption. There e three principal groups of such markets: (1) the central arkets of the interior which are variously known as "pri-ary markets," "interior points of concentration," interior holesale markets, etc.; (2) the "seaboard markets" of the

Atlantic, Gulf and Pacific seaboards; and (3) the foreign central markets to which most agricultural exports are shipped for distribution throughout foreign countries. The difference between these central wholesale markets is sometimes merely a geographical one, but farm products frequently pass through or become the basis for trade in both an interior and seaboard market before they are finally disposed of, and agricultural exports may pass through the entire threefold chain of central markets.

These central markets are equipped with large terminal elevators and warehouses, exchanges, auction rooms, livestock yards, rail and water transportation facilities, inspection rooms, banking facilities, and all equipment needed for the storage, preparation, handling, purchase and sale, insurance, shipment and financing of large quantities of farm products. Commissionmen, brokers, auctioneers, wholesale dealers or jobbers, central distributors, contractors, exporters, importers, speculators, elevator and warehousemen, bankers, insurance men, ship brokers, inspectors, weighers, freight forwarders, trucking agencies and other commercial interests are engaged in the wholesale trade which is conducted in these markets. Many of them are, furthermore, equipped with numerous retail establishments and with flour mills, cotton or woolen mills, malt houses, meat packing plants, tobacco factories, or other consumers of farm products who depend upon the central wholesale markets as a direct source of supply.

The functions of the central markets for farm products vary in detail but may be generally summarized as follows:

1. They concentrate enormous quantities of American and in some cases of imported foreign agricultural products into a limited number of markets.

2. They provide continuous cash markets where such concentrated farm products are purchased and sold, in many instances, in accordance with established trade rules.

3. They provide extraordinary facilities for long-time as well as temporary public and private storage of farm products.

4. They expedite the cleaning, scouring, mixing, sorting and preparation of commodities which do not arrive in ap-

roved market condition or such as may yield increased profits a result of such handling.

5. They greatly facilitate the sampling, handling, inection, grading, weighing, or other similar trade services cident to the organized sale of farm products.

6. They hasten the collection and dissemination of trade formation.

7. They facilitate the shipment and distribution of farm oducts to secondary wholesale and to retail markets as they e currently needed.

8. The central markets facilitate the establishment of ation-wide, and in some cases of world-wide, prices for many the principal farm products—indeed it is at these markets at the wholesale prices of farm products, which underlie th growers' and retail prices, are determined.

9. They promote speculation in farm products and tend confine it to established rules. In the cotton and grain ades organized speculation dependent upon the purchase and le of future contracts on some of the exchanges has become widespread importance.[1]

10. Although the central markets are primarily wholesale stributing centers many are also centers of consumption, aving a large population requiring agricultural foods and merous industries dependent upon agriculture for their w materials.

**Secondary Wholesale Markets.**—There are many large nd small markets where farm products are purchased in holesale lots but which differ widely from the central wholele markets in that they are primarily centers of consumpon rather than shipping and distributing, price-making, ading, concentrating or speculative markets. They do not gularly perform any of the ten central market functions numerated above except the last-named.

Such markets may be called secondary wholesale markets, r although they at times obtain part of their supply of rm products direct from the growers' local markets, they e mainly supplied from the great central markets. All the

[1] For uses of organized speculation *see* chap. vii.

cities and communities located throughout the United States and in many foreign countries to which the central markets ship farm products in wholesale lots to be consumed in flour and textile mills, cereal manufacturing plants, tobacco factories, meat-packing and slaughtering establishments, malt houses, etc., or to be distributed by local wholesale and retail houses for final consumption, are markets of this kind.

**Retail Markets.**—Some of the principal farm staples such as wheat, rye and barley—except for feed purposes—cotton, leaf tobacco, meat animals and wool, are not regularly retailed in their crude condition. They are more commonly retailed after having been converted into manufactured or prepared wares such as flour and feed, malt, breakfast cereals, bakery products, textiles, tobacco manufactures, meat and meat products, the marketing organization of which differs widely from that which has been developed in the agricultural trades. Other farm products, however, such as fruits and produce, eggs, oats, corn, hay, straw, milk and country butter, are more generally retailed, and retail markets for them have consequently been developed.

The retail markets in many cases overlap all the other types of markets geographically, for farmers may often retail a portion of their crops directly in their local markets, and wholesale concerns sometimes conduct a retail as well as a wholesale distributing business. The retail markets, however, are provided primarily by that multitude of small and large retail dealers who purchase farm products in the wholesale markets or from the growers and distribute them to the consumers in relatively small lots.

## Classification of Marketing Processes

The trade interests which purchase and sell farm commodities in the various types of agricultural markets outlined above—growers, local buyers, central market dealers, secondary wholesalers, retailers and consumers—pursue different methods, but there is sufficient similarity between the various

gricultural trades to permit of a general description of their arketing organization.

**Growers' Sales.**—The producers of farm products usually ll their crops either in their local markets or in the central holesale markets. In the former case they may sell to local uyers who resell in the central markets, or to local retailers consumers for local consumption. Thus grain growers may ll to local dealers of various kinds who operate country ele-tors and warehouses, cotton growers to country merchants or ents of exporting and brokerage companies, stockmen to al livestock dealers, wool growers to local wool dealers and ents of central wool dealers or of distant woolen mills, and uit and produce growers to local shippers, distributors, okers, or agents of wholesale jobbers or "line houses." Or ould they sell for local consumption they may deal directly th local feed and seed dealers, local flour and grist mills, al textile mills, local butchers, local grocery stores, and arby canneries and manufacturers of prepared fruit prod-ts, or to local consumers of fresh fruit and vegetables.

Those growers who sell in the central wholesale markets ay either consign their crops to central commissionmen, okers, distributors or auction companies, or they may sell rough their own terminal salesmen. The former or con-gnment trade exceeds the latter in volume, for only a lim-d number of large growers or growers' associations have tablished direct salesmen in distant central markets. Grow-s sometimes ship direct to distant secondary wholesale or tail markets but their local and central market sales are of edominant importance.

Growers' sales may be further classified according to ether they are made individually or through coöperative sociations. The larger number of growers sell individually t the rapid growth of coöperative associations has become e of the features of the agricultural trades. The amazing mber of coöperative country grain-elevator companies, cot-n growers' unions and warehouse companies, livestock and ol-shipping associations, coöperative wool warehouse con-rns, fruit and produce growers' associations, and leaf tobacco

associations which have been organized in various parts of the United States, are more fully described in later chapters. Coöperative marketing is also conducted through a multitude of general coöperative stores, coöperative creameries and cheese factories, and coöperative potato, poultry and egg shipping associations. The larger number of growers' associations are local concerns which displace or compete with local dealers and buyers, and ship to the central markets on consignment, but a growing number have taken an additional step in the marketing organization by establishing salesmen, agents or brokers at the central markets with a view to obtaining maximum profits and eliminating terminal commissionmen. Some coöperative associations do not actually market the crops of their members but exert an influence on individual sales by providing trade information, establishing general trade rules, facilitating loans, inspection, packing and grading, recommending standard minimum prices, diversified crops and storage, or in other ways more fully described in connection with particular crops.

Growers' sales differ also as to whether they are made at the current prices ruling in the local or central markets or at contract prices. The former practice, which is the more common, constitutes a spot sale; the latter a future contract transaction. In many cases when a grower contracts to deliver his entire crop or specified quantities of potatoes or other vegetables, eggs, milk, wool, leaf tobacco, sugar beets or other products at agreed prices, he is "selling short" a crop which has not as yet been harvested.

When selling his products in the central markets, the grower's sales may vary according to the place and manner of delivery. (1) The grower may sell products "to arrive," that is before they have actually arrived at the central market, with the understanding that they will be inspected, graded and weighed upon arrival and that final settlement shall be deferred until such time. (2) He may sell them after their arrival but while they are still in freight cars or vessels, such sales being variously known as "on track," "in car" or by other terms understood in the trade. (3) He may have his

roducts stored in elevators or warehouses to be sold at a ter date, in which case the transaction is known as an in store" sale. Livestock is similarly sold at the central ockyards after the animals have been unloaded from the ock cars, although in this case the seller's purpose is not iat of storage.

Shipment to the central markets may also differ as to hether the price paid includes or excludes shipping costs. F. o. b." transactions require the delivery of the commodi- es free on board at the local or other agreed shipping point, ie freight charges and other shipping costs beyond to be paid y the purchaser. "C. i. f." (cost, insurance and freight) ransactions on the contrary call for net prices, the seller greeing to pay the freight charges and insurance costs.

**Local Dealers' Sales.**—Farm products purchased from the rower by local consumers or by dealers who resell them for ocal consumption are essentially simple and require no special escription. Those which are purchased by local dealers for ipment to central markets are disposed of in any of the arious ways pursued by growers who sell in the central mar- ets. The practice of selling without the assistance of central ommissionmen is, however, more common among local dealers ian among growers. A larger number have terminal sales- ien or have standing contracts with central dealers. Many ocal buyers, moreover, are merely the local salaried agents of arge central dealers or manufacturers who instruct them here to ship their purchases and arrange for the resale or dis- osition of all shipments. Some local dealers, likewise, act as ocal commission agents or brokers for central market buyers, eceiving a commission or brokerage fee on all fruit, wool or ther farm products purchased on account of their principals, ut having no voice in their resale at the central markets.

**Central Market Trade Organization.**—One of the chief haracteristics of the trade in agricultural products is its in- irectness as compared with the trade in manufactures and ther commodities. A large share of the country's farm crops efore they reach the consumer pass through central market xchanges, the sales of which are made indirectly through

authorized exchange brokers, instead of passing directly from seller to purchaser.

The principal method of marketing farm products at the central markets, therefore, is by sale on *organized produce exchanges* variously known as boards of trade, chambers of commerce, bourses or exchanges. Some of them are general exchanges on which many kinds of farm products and even non-agricultural commodities are sold, while others constitute special markets for but one or at most a small number of articles. Many of the grain exchanges, such as the Chicago Board of Trade and the New York Produce Exchange, are examples of general exchanges, while most of the cotton, tobacco, wool, livestock, milk and dairy produce exchanges are special exchanges. Produce exchanges may also be divided into spot or cash and speculative or future markets, the members of the former confining their activities to the purchase and sale of spot produce for current delivery while the latter in addition deal in future contracts which call for delivery at some future time, and, as is more fully described in a later chapter,[1] are frequently fulfilled without the delivery of actual farm products.

The spot or cash transactions made through exchange members are most commonly conducted on the basis of samples selected by authorized samplers and exhibited on the floor of the exchange. They may also be made on a basis of duly established grades or standards, upon a combination of both samples and grades, or the commodities in their entirety may be exhibited in authorized yards or warehouses as is the general practice in the sale of livestock and to some extent in the sale of leaf tobacco, wool, fruit and vegetables.

The farm products concentrated in a given central market are mainly disposed of on the exchange located in that particular center, but may also be sold on exchanges located elsewhere. Large quantities of grain held by the dealers of the primary grain markets of the West, for example, are sold through brokers on the seaboard grain exchanges on the basis of authorized samples.

[1] *See* chap. vii, p. 140.

The "future" transactions made on the speculative exchanges are based upon agreed standard or basis grades of a given commodity, the terms of the future contract and of the exchange rules specifying what grades may be delivered and how price differences shall be settled should other than the basis grade be delivered when the contract matures. Three principal groups of trade interests deal in "futures": (1) merchants, exporters or other dealers, millers and spinners who desire to eliminate or reduce the speculative risks resulting from fluctuations in the price of grain, cotton or mill products which they have on hand or have privately contracted to deliver or accept, frequently sell or purchase futures to hedge their spot transactions;[1] (2) speculators who deal in future contracts with a view to obtaining profits from fluctuations in future prices; (3) flour millers and cotton spinners who sometimes purchase future contracts on the exchanges and require the delivery of grain or cotton upon maturity, but the use of futures for this purpose has been limited because the seller may usually deliver any one or more of a number of different grades.

Farm products are at times sold at *auction sales.* It is in some cases difficult to clearly distinguish between exchange and auction markets, but the distinguishing feature of the latter is that the sales on them are made through one or a limited number of auctioneers who offer the auctioned products directly to the highest bidders who may or may not be members of an established trade organization, while the sales on the exchanges are the result of bids and offers between any of a large number of exchange members who act for themselves or as brokers for their customers.

The auction sales in the large central fruit and vegetable markets are especially common and are typical. They are conducted through auction companies which exhibit samples of fruit or produce owned by them or placed in their care by growers, local shippers, importers, commissionmen, central dealers or others and sell them through auctioneers to the highest bidders. The leaf tobacco auction sales of the South

[1] Hedging is described in chap. vii, p. 156.

are also important, but instead of being controlled by special auction companies, are conducted on the floors of public tobacco warehouses and usually in accordance with trade regulations imposed by tobacco exchanges or public authority.

Many farm products are, also, *sold privately* in the central markets. Central commissionmen, brokers, distributors, wholesale dealers or jobbers, contractors, exporters, importers, etc., frequently deal directly with local shippers or growers, with each other, with flour and textile mills, malt houses or other consumers, or with secondary wholesale and retail establishments. Such private transactions, as in the case of exchange sales, may call either for immediate or future delivery. Private future contracts, however, usually provide for the delivery of a particular grade or quality of produce at a specified date and at a designated place which may be located anywhere in the world. They are cash contracts which differ in detail and are made by persons who intend to demand or make actual delivery. A relatively small number of large cities have established *wholesale municipal markets* where agricultural foods may be distributed through private or auction sales.

**Secondary Wholesale Market Transactions.**—Secondary wholesale markets ordinarily do not contain organized exchanges, the wholesale buyers in them purchasing their supplies of farm products in the central markets, from local dealers or growers in the local markets, or from salesmen or brokers who canvass the secondary markets for central dealers or distributors. When purchasing in the central markets any of the trade methods there available may be pursued.

The wholesale purchasers of the secondary markets are of three principal types: (1) industrial concerns such as flour mills, cotton or woolen mills, meat-packing and slaughtering plants, malt houses and tobacco factories, which purchase in wholesale lots for consumption; (2) wholesale dealers in products such as fruit and vegetables, dairy products, hay, straw and oats, who purchase to resell either to retailers or consumers; and (3) retail stores purchasing in wholesale quantities for resale in smaller lots to consumers.

**Retail Sales.**—Such farm products as are retailed to con-mers are also handled through three main channels:

1. A large group of general and special retail dealers, in-uding general retail grocers operating individually, in ains, or as members of retail associations; special fruit and oduce retailers; delicatessen retailers; hucksters and ven-rs; milk dealers or contractors; retailers of dairy products; d grain, hay, straw and feed dealers.

2. General and special wholesale dealers who conduct a tail as well as a wholesale business.

3. Growers or producers, especially those located near the tail markets, who sell directly to the consumers.

Retailers of farm products, other than those who are grow-s or producers, obtain their supplies either from nearby holesale dealers or from any of the various sources which pply the wholesale trade. Their retail sales are made di-ctly to consumers in numerous ways. They sell (1) cur-ntly at private retail stores or other established private aces of business; (2) currently at the consumers' premises is the custom of hucksters and vendors of fruit and vege-bles and of such retail stores as daily send solicitors to the nsumers or use their delivery service for soliciting purposes; ) by obtaining a permanent order or agreement to deliver ecified quantities of milk or other products until notified the contrary; and (4) at public or municipal markets.

Growers or producers likewise retail chiefly in the four ys mentioned in the preceding paragraph. Their perma-nt retail stores, however, are relatively of least importance, nsisting mainly of general coöperative stores, most of which e organized primarily to purchase groceries and general mer-andise and for the profit anticipated from the sale of such res to outside customers rather than as important means r selling farm products. Growers retail mainly at the con-mers' premises, either currently or on the basis of standing lers, and in municipal markets. Livestock is frequently ailed at open markets known as "cattle fairs," "horse mar-ts," etc., where livestock may on agreed days be sold pri-tely or at retail auctions. Small quantities of eggs, fruits

and produce have been retailed through the medium of express companies and the parcels post service.

Municipal markets for the sale of vegetables, fruit, eggs, butter, poultry and other farm produce and foodstuffs by growers and dealers have been established in most large and in many smaller cities. Some of them are open-air or curbstone markets and others covered or inclosed markets. Most of them are strictly retail markets while others are used both for wholesale and retail selling. Some are operated free of charge while others require growers and dealers to pay a license fee or an annual, monthly, weekly or daily rental. The sales in these markets, moreover, may be made from wagons and trucks or from fixed stands, and they may or may not be subjected to public inspection. The establishment of municipal retail markets for growers has been facilitated by the rise of the freight trolley, motor truck, parcels post, local water transportation and railroad "market shipment" services.

There is at present much agitation in favor of establishing a larger number of municipal markets in the larger cities. There are also some who desire the establishment of large wholesale or terminal municipal markets where farm products of many kinds received from distant as well as from nearby growers could be properly inspected upon arrival and either retailed in small lots by the growers or distributed to retail dealers and large consumers in wholesale lots, privately or at auction sales conducted by bonded municipal auctioneers.

**Consumers' Purchases.**—As the growers of farm products stand at one extreme of the agricultural trade organization so the consumers stand at the other. Consumers may purchase in any of the various groups of markets, and at any step in the trade, machinery provided for the purchase and sale of farm commodities. Some of them purchase directly from the farmers or from local market dealers, some purchase in the central markets from any of the wholesale trade interests located there or in the secondary wholesale markets from wholesale dealers stationed at such points, and others obtain farm products from agricultural retail dealers. The description of the agricul-

ural trade organization may begin either with the growers or he consumers and since the former method facilitates discus- ion and obviates undue repetition it has been adopted in his and succeeding chapters.

The increased cost of foodstuffs has in recent years en- ouraged the formation of "consumers' leagues" or associa- ions which in most instances endeavor to instill publicity nto the marketing organization and to instruct consumers ow to purchase, although they sometimes in order to reduce etail prices undertake the purchase and resale of agricultural oods. Coöperative consumers' retail stores have also been rganized in a few cities.

## Exporting and Importing Methods

**Agricultural Export Methods.**—Many trade interests are ngaged in the exportation of American farm products, and as ill be shown in subsequent chapters the methods of exporting re not uniform. Most of the various kinds of agricultural xporting concerns may, however, be divided into three prin- ipal groups:

*1. American Exporting Concerns.*—American exporters ho handle farm products on their own account may be either eneral or special, the former shipping a variety of commodi- ies, and the latter one or at most a small number of farm roducts. Most of them are specialized, and many are en- aged in domestic as well as in foreign commerce. Thus, nuch grain is exported by terminal grain-elevator companies, entral market grain dealers and special grain-exporting con- erns. Most of the cotton is shipped by American cotton-ex- orting companies or brokerage concerns; most export cattle y the large meat-packing houses and by special livestock ex- orting concerns; and much leaf tobacco by subsidiaries of obacco manufacturing concerns or by special leaf tobacco lealers and packers. The headquarters of these exporting oncerns may be either in the central markets of the interior r in the seaboard markets.

*2. American Commission Houses.*—A portion of the agricultural exports is handled by domestic commission houses, which may likewise be either general or special. Indeed the exporting concerns mentioned above sometimes fill orders on a commission basis instead of buying and selling on their own account.

*3. Foreign Agents.*—Foreign importers at times send agents to the United States to purchase American farm products. The practice is especially common in the exportation of leaf tobacco, but it exists also in other branches of the agricultural export trade.

The exporters of farm products make their purchases in any of the markets and in any of the various ways in which agricultural commodities are purchased for domestic use. They ship them to foreign import houses, wholesale dealers, commissionmen, brokers, and sometimes directly to foreign consumers. They dispose of them both by private sale and on foreign or American exchanges, and in many instances they merely fill orders which they have received from abroad. In the foreign trade, sales to foreign buyers are very frequently made on the basis of grades or agreed standards rather than on the basis of samples, for the foreign markets are far removed and a vessel load of grain, cotton or other farm staple may be resold by the original importers long before its arrival.

The trade machinery is unusually well organized in the agricultural export trade. Foreign and American exchanges and commercial houses are connected by cable; orders based upon established grades or standards can be readily transmitted; and trade customs and practices are of long standing and are well understood by all parties concerned. For these reasons and because of the relative ease with which markets can be found for foods and raw materials, many of the costly marketing methods which are necessary in the exportation of manufactures are not essential to the successful exportation of American farm products.

**Agricultural Import Methods.**—There is even less uniformity in the methods of importing farm products, for the imports include a wider variety of commodities and are ob-

tained from an amazingly wide range of countries. Many are imported from the more recently opened trade regions of the world rather than from the well-established countries of western Europe.[1]

They are imported principally by three groups of concerns:

*1. American Import Houses.*—There are many special and general importers who purchase foreign agricultural products on their own account with a view to reselling them to coffee roasters, sugar refineries or other consumers or dealers.

*2. American Import Commission Houses.*—Some agricultural imports are handled on commission by concerns to whom they have been consigned or to whom purchasing orders have been given.

*3. American Consumers.*—American manufacturers, particularly those requiring large quantities of raw agricultural materials, sometimes import directly from foreign exporters. For the production of some commodities, such as bananas, leaf tobacco, and sugar, American traders and manufacturers at times own foreign plantations on which they produce a portion of their requirements.

Imported farm products are variously purchased from foreign export houses, wholesale dealers, commissionmen, brokers, central sugar refineries or other middlemen, or directly from foreign producers. They are sometimes purchased in the country in which they are produced and at other times indirectly in England, Holland, Belgium, Germany or other European countries where wool and other products are concentrated for resale and transshipment. They are variously purchased privately, on exchanges, or at public auction sales. Bids and offers may be made by cable or mail, standing arrangements with foreign exporters or commissionmen may be made, and numerous American buyers are sent abroad so as to reduce costs and obtain the quality of products desired at favorable prices. When foreign agricultural products are imported to be resold in the United States they are disposed of privately, on exchanges or at auction sales in the same manner that domestic farm products are sold in the wholesale

[1] *See* **chap. xviii.**

markets. Some imported farm products, such as green coffee, raw sugar and wool, are frequently sold on organized American exchanges, but in the agricultural import trade as a whole such sales are less common than in the export trade.

Although the agricultural trades are similar, the districts in which they are produced, their markets, the methods of buying and selling, shipping, inspecting, grading, storing and otherwise handling them, the extent and manner of public or exchange control, the methods of collecting trade information, and the factors influencing their prices, all differ in many respects. The purpose of subsequent chapters is to describe the trade in some of the principal farm crops in greater detail.

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## CHAPTER III

### THE COUNTRY GRAIN ELEVATOR AND WAREHOUSE SYSTEM: THE LOCAL GRAIN MARKET

**Functions of Country Elevators and Warehouses.**—Before that portion of the country's grain crop which is marketed by the growers is concentrated at a relatively small number of great primary grain centers it passes through thousands of local grain markets. The grain farmer's markets are ordinarily not the huge elevators found at the central grain markets of the interior and the seaboard, but the thousands of small country elevators and warehouses which are scattered throughout the two hundred million acres which produce the country's principal grain crops. The sales of many thousands of grain growers of the United States are made principally at the country elevators and warehouses which constitute the first link in the extensive trade and shipping organization which has been evolved for the sale and distribution of the grain crops. As is shown in Table II they annually handle over four hundred million bushels of wheat, over five hundred million of corn, over three hundred million of oats, from ninety to one hundred million bushels of barley, and smaller quantities of rye, flaxseed and other minor grains.

As is stated by the Bureau of Labor Statistics in a recent publication: "The province of the country grain elevator is to supply a market to the farmer for his grain, to afford a temporary storing place for grain going to market, and to provide an easy means of transferring it from the farmers' wagon to the car for shipment." [1]

[1] "Wheat and Flour Prices from Farmer to Consumer," Bulletin No. 130, p. 17.

## Geographical Distribution of the Local Grain Trade

**Distribution of Local Wheat Trade.**—The United States has in recent years raised over seven hundred million bushels of wheat annually, having a farm value of from $500,000,000 to $600,000,000. At present the country's annual wheat crop is second only to that of Russia, and for many years it exceeded that of any foreign country. American wheat exports, owing to largely enhanced home requirements, have steadily declined during the twentieth century, and prior to the European War were exceeded by those of Russia and Argentina. Indeed, were it not for the exports of American wheat flour, the exports of wheat from the United States would also be exceeded by those of Roumania, Canada, Australia and British India, in each of which countries there is a growing surplus as there was in the United States during the eighties and nineties. Before the outbreak of the European War but 10 to 19.5 per cent. of the American wheat crop had been exported during recent years as compared with 21 to 41.5 per cent. during the years 1875 to 1900.

The wheat-growing area of the United States has been spread over such a wide territory that there is little likelihood of a general crop failure. Local failures are not uncommon, but the diversity in variety of wheat and geographical location tends to maintain a high average crop. During the year 1913, the order of importance of the principal wheat-growing states was: North Dakota, Kansas, Minnesota, Nebraska, Washington, Illinois, Indiana, Missouri, Ohio, South Dakota, Pennsylvania, Montana, Oklahoma, Iowa and Oregon—but their relative position changes from year to year. In 1912, for example, the wheat crops of Illinois, Indiana and Ohio were partial failures while those of North and South Dakota and Kansas were the largest in the history of those states.

As is shown in the accompanying map (No. III), the wheat-growing area may be divided into four principal districts. The first or soft winter wheat belt comprises the states

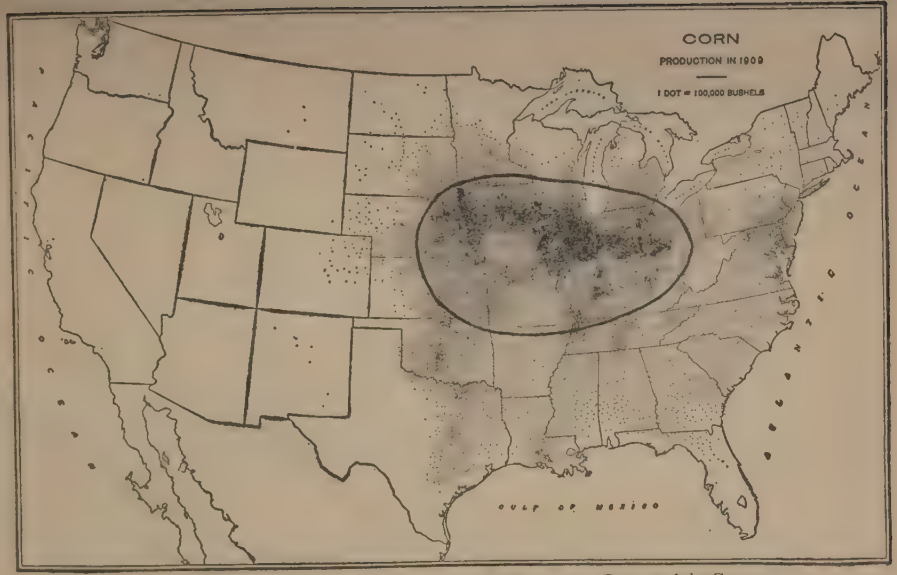
Data showing Production 1909, as in Thirteenth Census of U. S.

lying east of the Mississippi and north of the Ohio River from western Pennsylvania to Illinois. The second comprising the central trans-Mississippi Valley: Kansas, Nebraska, Missouri, Oklahoma, and Iowa—extending as far west as the Great Plains—grows chiefly the various varieties of hard winter wheat. The third, or spring wheat belt, includes North and South Dakota and Minnesota. The fourth includes the wheat fields of the Pacific Slope: Washington, Oregon, Idaho and parts of California—where both spring and winter wheat are grown. The rapidly expanding wheat fields of Montana may either be included in the last-named district or regarded as the leading producers in a fifth or Rocky Mountain wheat belt.

The Department of Agriculture estimates that during the decade ending in 1915, 57.7 per cent. of the country's wheat crop reached the grain market, i. e., was shipped out of the county in which it was grown. The remainder was retained by the wheat growers for seed, locally ground into flour or feed, or sold for local consumption. Most of the 350,000,000 to 540,000,000 bushels which annually entered the country's grain trade was handled locally by country elevators or warehouses.

**Distribution of Local Corn Trade.**—As is shown in Table II the corn crop of the United States is vastly more important than the wheat crop. In 1912 it reached the enormous total of 3,124,746,000 bushels having a farm value of one and one-half billion dollars. Over 70 per cent. of the world's annual corn crop is grown in the United States; its nearest rivals—Austria-Hungary and Argentina—producing less than 300 million bushels each.

Though about 500 million bushels of corn annually enter into the grain trade of the United States, grain dealers have always been primarily concerned with the wheat crop. This is because less than 30 per cent. of the total corn crop reaches the country's grain markets. Over 70 per cent. annually is disposed of locally for seed purposes and to fatten livestock. Much the larger share of the corn crop reaches the grain trade only after it has been converted into livestock or beef, mutton




Thirteenth Census of U. S., 1910.—Department of Commerce, Bureau of the Census.

and pork products.[1] Yet, there are thousands of local grain elevators and warehouses which handle corn, for the volume which now reaches the grain trade exceeds that of wheat.

As is graphically shown in Map No. IV, though appreciable quantities of corn are grown throughout the southern states and in various regions throughout the country, there is really but one great American corn belt, and it extends through the Ohio and Mississippi River Valley from Ohio to northern Texas. The corn fields of Iowa, Illinois, Missouri, Ohio, Indiana, Kansas, Nebraska, Texas and Oklahoma provide the corn market with most of its annual supply and feed vast numbers of cattle, sheep and hogs. The corn belt is located principally within the relatively small oval indicated in the map.

**Distribution of Local Trade in Oats.**—The oats crop of the United States (*See* Table II), though closely rivaled by that of Russia, is also larger than that of any foreign country in the world. So large, however, are the crops of Russia, Germany, Canada, France, Austria-Hungary, Great Britain, Argentina and other countries, that the oats fields of the United States produce but 20 to 30 per cent. of the world's crop. The international trade in both oats and corn is small as compared with that of wheat, the exports of American oats being almost negligible and those of corn in recent years comprising from 1½ to 4½ per cent. of the annual crop. As in the case of corn, moreover, much the larger share of the oats crop of the United States is retained for local consumption and does not enter the country's grain trade. During the decade ending in 1914 somewhat less than 30 per cent. of the annual oats crop was shipped out of the county in which it was grown. To collect 300,000,000 bushels of oats annually from the thousands of farmers who sell a portion of their crop, however, requires a large number of country grain elevators and warehouses. Many of those located in Iowa, Illinois, Minnesota, North Dakota, Ohio, Wisconsin, Indiana, Nebraska, South Dakota, Kansas and Michigan, regularly handle oats as well

[1] N. C. Murray: "Disposition of Feed Crops," Farmers' Bulletin No. 629, p. 8.

## TABLE II

PRODUCTION, QUANTITY MARKETED AND FARM VALUE OF LEADING GRAIN CROPS* (000 omitted)

| Item | 1900 | 1905 | 1910 | 1912 | 1913 | 1914‡ |
|---|---|---|---|---|---|---|
| Wheat crop of U. S.....(bu.) | 522,230 | 692,979 | 635,121† | 730,267 | 763,380 | 891,950 |
| Wheat shipped out of county where grown..... " | 281,372 | 404,092 | 378,711 | 449,844 | 411,461 | 541,414 |
| Winter wheat crop of U. S..... " | 350,025 | 428,462 | 434,142† | 399,919 | 523,561 | 675,115 |
| Spring wheat crop of U. S..... " | 172,204 | 264,517 | 200,979† | 332,348 | 239,819 | 216,835 |
| Wheat crop of world..... " | 2,640,751 | 3,327,084 | 3,575,055 | 3,879,087 | 4,125,658 | 3,791,875 |
| Corn crop of U. S..... " | 2,105,103 | 2,707,994 | 2,886,260† | 3,124,746 | 2,446,988 | 2,705,692 |
| Corn shipped out of county where grown " | 478,417 | 681,539 | 692,975 | 680,195 | 425,882 | 403,259 |
| Corn crop of world..... " | 2,792,561 | 3,461,181 | 4,031,630 | 4,362,288 | 3,607,359 | ..... |
| Oats crop of U. S..... " | 809,126 | 953,216 | 1,186,341† | 1,418,837 | 1,121,768 | 1,139,741 |
| Oats shipped out of county where grown " | 242,850 | 277,133 | 351,454 | 438,266 | 297,269 | 335,094 |
| Oats crop of world..... " | 3,166,002 | 3,510,167 | 4,182,410 | 4,618,644 | 4,672,168 | ..... |
| Barley crop of U. S..... " | 58,926 | 136,551 | 173,832† | 233,824 | 178,189 | 196,568 |
| Barley shipped out of county where grown " | ..... | ..... | ..... | 120,193 | 86,243 | 88,652 |
| Barley crop of world..... " | 959,622 | 1,180,053 | 1,388,734 | 1,466,313 | 1,613,748 | ..... |
| Rye crop of U. S..... " | 23,996 | 28,486 | 33,039 | 35,664 | 41,381 | 42,664 |
| Flaxseed crop of U. S..... " | 20,000 | 28,478 | 14,116 | 28,073 | 17,853 | 15,973 |
| Buckwheat crop of U. S..... " | 9,567 | 14,585 | 17,239 | 19,249 | 13,833 | 17,025 |
| Farm value of wheat crop of U. S..... | $323,515 | $518,373 | $561,051 | $555,280 | $610,122 | ..... |
| Farm value of corn crop of U. S..... | 751,220 | 1,116,697 | 1,384,817 | 1,520,454 | 1,692,092 | ..... |
| Farm value of oats crop of U. S..... | 208,669 | 277,048 | 408,388 | 452,469 | 439,596 | ..... |
| Farm value of barley crop of U. S..... | 24,075 | 54,993 | 100,426 | 112,957 | 95,731 | ..... |

* U. S. Department of Agriculture Year Books (1900 to 1912); The Agricultural Outlook, Dec. 27, 1913, Feb. 7, 1914, Mar. 18, 1914, Mar. 23, 1914, Nov. 23, 1914, Oct. 16, 1914 and Mar. 20,1915. † Figures adjusted to census basis. ‡ Preliminary Estimates.

as other grains. All the states of the corn belt are heavy producers of oats, but the oats crop is more widely scattered, for oats thrives in northern states such as Wisconsin, Michigan and in the states of the spring wheat belt where the early frosts have retarded the rapid introduction of corn.

**Distribution of Local Trade in Barley.**—The barley crop of the United States is decidedly smaller than that of wheat, corn or oats (*See* Table II). The greatest barley-producing country is Russia where over 574,000,000 bushels were grown in 1913 as compared with 178,189,000 bushels in the United States. From 45 to over 57 per cent. annually of the American crop reaches the grain market, principally in Minnesota, California, North Dakota, Wisconsin, South Dakota and Iowa. The crops of other minor grains—rye, buckwheat and flaxseed—are shown in Table II.

## Transfer of Grain from Grower to Country Elevator or Warehouse

**Length and Cost of Local Haul.**—Though the number of country elevators and warehouses at which the grain growers sell their crops is increasing, and their location at local shipping points is arranged with reference to the proximity of the grain fields as well as with reference to railroad connections, much grain requires long and expensive country hauls. The average distance from the wheat fields of the United States to the local markets in which it is sold was in 1906 reported to be 9.4 miles, and to vary from 4 to 22 miles in different states;[1] and corn was in that year hauled by the growers to the country elevator, an average distance of 7.4 miles in the United States as a whole and from 3.2 to 29.4 miles in various states. The average distance from all farms producing crops of every kind to the local markets in 1915 is

[1] "Costs of Hauling Crops from Farms to Shipping Points." U. S. Bureau of Statistics (Department of Agriculture), Bulletin No. 49.

reported to be 6.5 miles, and from the more remote farms 8.7 miles.[1]

The average cost of transporting grain to the local markets was in 1906 reported to be 9 cents per 100 pounds in the case of wheat and 7 cents in the case of corn. Inasmuch as railway-lake rates on wheat from Chicago to New York varied from 5.02 to 7.01 cents per bushel during the years 1900 to 1913, and all-rail rates ranged from 9.60 to 11.70 cents, it is evident that the country haul, although short as compared with the railroad haul to or from the central grain markets, is an important consideration in the local grain trade. The Bureau of Statistics of the Department of Agriculture estimated that the cost of hauling the 1905-1906 crop of corn, wheat, oats, barley and flaxseed from the farms to local shipping points aggregated over $62,000,000. The cost of hauling corn was estimated to comprise 9.6 per cent., wheat 7.2 per cent., oats 7.7 per cent., barley 8.3 per cent., and flaxseed 5.3 per cent. of the farm value of the loads hauled.

**Methods of Local Hauling.**—Grain is conveyed to local shipping points by various methods. Most of it is hauled by the growers themselves, and is regarded as a secondary source of employment for the equipment and drivers whose chief employment is on the farms. Each grower may perform his hauling individually, or neighboring growers may perform it coöperatively. Some grain hauling, however, is performed by hired "freighters," for in some parts of the Mississippi Valley and especially in the Pacific Slope and Rocky Mountain grain belts, the distances to local shipping points are so long that it is unprofitable for the growers to maintain sufficient equipment and drivers to perform all the necessary hauling. The professional freighters haul grain and other farm produce at regular tariffs and on the return trip frequently transport farm machinery, supplies or merchandise. Some hauling is also done by the elevator companies.

Grain may be hauled either in bulk or in sacks, and it may be hauled either from the grower's granary or direct from the

[1] U. S. Bureau of Crop Statistics: The Agricultural Outlook, Apr. 23, 1915, and Farmers' Bulletin No. 672, pp. 11-14.

threshing machine in the fields. The practice in these matters depends upon the requirements and customs of particular markets, the method of harvesting, the financial condition of the growers, their views as to the desirability of present or future marketing and other local considerations. The type of equipment used, likewise, varies widely and depends somewhat upon local conditions, such as the length of haul, the condition of the roads, and the method of hauling. The number of horses or mules per driver varies from two to fourteen, the number of wagons per haul from one to two or more, and the weight of grain hauled from 800 to 16,000 pounds. The wagons may be ordinary farm wagons, or vehicles especially constructed to carry grain in bulk, and they may be hauled individually or in trains. Professional freighters sometimes haul loads of seven tons in one freight wagon and its trailers, and use as many as twelve or fourteen horses in one team. In recent years there are instances in which grain has been hauled to local shipping points in automobile trucks.

## Description of Country Elevators

Country elevators are located and constructed so as to perform their various functions expeditiously. In every important grain-growing district, except on the Pacific Slope where most of the grain is handled in sacks, there are hundreds of these elevators along each of the grain-carrying railroads. Many local grain-shipping points are equipped with five or six elevators, and at most local markets in important grain-growing districts there are at least two.

Country elevators usually have a capacity of only 20- or 25,000 bushels and consequently cannot store large volumes of grain for long periods of time. Since a large proportion of the grain available for the market is sold by the growers during the ninety days after its harvesting, they are so equipped that they can handle whatever quantities are brought to them. The larger elevators handle from 40- to 300,000 bushels, some handling as much as 1,000,000 bushels annu-

ally. The yearly output of the average country elevator is 100,000 bushels or less. It is considered that an annual business of 100,000 bushels of wheat bought at the primary market price minus the freight rate and a price margin of three cents per bushel will yield a fair profit on the investment. The construction and equipment cost of the average country elevator is about $4,000, although the cost varies from $3,000 to $25,000.

These elevators are constructed so as to reduce operating costs to a minimum. The following concise description is given by the Bureau of Labor Statistics:

> The country elevator is so constructed as to call for very little manual labor. The farmer drives on the scales with his loaded wagon, which is weighed in gross, then drives into the elevator shed where the end board is taken from the wagon, and by the pulling of a lever the wagon is tipped backward and all the grain runs out of the wagon box into the bin below. He then drives on the scales again and the empty wagon is weighed. From the difference in these weights the number of bushels is computed and the farmer receives a certificate of weight and possibly at the same time a check for his grain. The wheat dumped into the bin below the wagon floor is hoisted by elevating machinery to a bin in the elevator whence it is spouted into a car for shipment.[1]

The ordinary elevator has but six or eight bins or lofts into which the grain is elevated from the bins below the wagon floor. Fewness of separate bins, as well as trade considerations, leads to the mixing of the grain. Indeed one source of elevator profit is the skillful mixing of different grades in such a way as to raise the grade of a part of the grain purchased from the farmers.

The operating costs of the average country elevator are low because a manager and from one to three helpers are able to operate it even during the busy season, and one or two men can operate it during the months of dull business. In the case of wheat a margin of 3 cents per bushel and an allowance of

[1] "Wheat and Flour Prices from Farmer to Consumer," Bulletin No. 130, p. 17.

the freight rates to the primary market is considered sufficient to cover operating costs, insurance, inspection fees, "shrinkage" in weight incident to handling the grain and all current expenses, as well as a return on the investment. In purchasing corn, oats and barley a margin of $1\frac{1}{2}$ to $2\frac{1}{2}$ cents per bushel is ordinarily allowed in computing the country price, while, owing to a greater degree of risk, the margin in local purchases of flaxseed is usually 5 or 6 cents a bushel.

## Management of Country Grain Elevators

**Classification of Country Elevators.**—Country grain elevators are owned and managed in three principal ways: (1) by "line elevator companies," (2) by local grain dealers, and (3) by farmers' coöperative elevator associations or companies. In addition to the many elevators operated in these ways, a smaller number of elevators are operated (4) by mill owners and malting concerns. A portion of the barley crop is purchased directly from the farmers through elevators operated by malting plants, but the number of country elevators operated by flour and grist mills is small. A few country elevators are also owned and managed (5) by "bonanza farmers" whose acreage and crop are sufficiently large to warrant the investment of funds in elevator properties. The railroads still have an interest in some elevators, and some grain is consigned to central commissionmen by farmers or shippers who load the grain into cars without the medium of elevators or warehouses.

**Line Elevator Companies.**—The so-called "line elevator company" is a concern operating large numbers or lines of country elevators along one or more railroad routes and has its headquarters at the primary market to which it ships most of the grain purchased from the farmers. Some of these concerns which were first organized in the period of 1889 to 1900 operate lines of elevators extending throughout three or more states. In competing with local grain elevator dealers the line elevators have the advantage in that they extend over wide

areas and consequently obtain a larger share of the crop. Since the profits of country elevators depend not only upon the price margin but also upon the volume of grain handled, the line elevator concerns have at times been able to make a fair aggregate profit even though the profit per bushel of grain was small. They have an advantage also in that the large volume of grain handled enables them to sell their grain at the primary markets through agents of their own. By avoiding the central commissionman they eliminate one of the middlemen of the grain trade. It has, moreover, been asserted that in the past, before common carriers were subjected to stringent federal and state regulation, the line elevator concerns sometimes had the advantage of special railroad charges and services.

The local agents in charge of line elevators receive daily instruction from headquarters by mail as to the prices to be paid for all grades of the various grains purchased, and when wide price fluctuations suddenly occur at the primary market during the day price changes are telegraphed to them. The prices paid the farmers depend upon the prices prevailing at the primary grain market, the farmers receiving the primary market prices less the cost of freight and a margin or allowance of a certain number of cents per bushel. As was formerly explained the price margins usually range from $1\frac{1}{2}$ to $2\frac{1}{2}$ cents for the coarser grains and from 5 to 6 cents for flaxseed.[1] Price margins for wheat vary considerably but an effort is made to maintain them at about three cents per bushel.[2]

The grading of the grain at the country elevators is largely a matter of local judgment, because grading and inspection at the local markets is not regulated by state law to the extent that it is at the primary grain markets. At points where several buyers are stationed the resulting competition has in re-

[1] "Wheat and Flour Prices from Farmer to Consumer," Bureau of Labor Statistics, Bulletin No. 130, pp. 18-26.

[2] S. Harris: "Methods of Marketing the Grain Crop," *Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 41.

cent years usually guaranteed liberal grading to the farmer because it is to the interests of the various elevator concerns to handle as large a volume of grain as possible. At non-competitive points there is more complaint on the part of farmers, and in some local markets, especially in regions where the quantity of grain sold is relatively small and where the trade is not well organized, grain is still purchased from the farmers without the establishment of definite grades. The buyer in the latter case bears in mind the probable grades which the grain will be given at the primary market, but in bargaining with the farmer no official grades are established.

Since most of the available grain is purchased from the farmers shortly after its harvesting, the line elevator companies require large sums of cash during the busy season. Being large concerns they can, of course, provide a portion of the needed funds directly from their own resources, but additional cash with which to buy grain at the country elevators is realized on the grain which is shipped to the primary market from day to day and sold at a profit. Grain which has been sold "to arrive," i. e., before it has actually arrived at the primary market, and which is shipped on order bills of lading, may provide the local elevator agents with cash at the time of its shipment, for banks accept such bills for payment. Some cash, moreover, is borrowed from banks with grain in storage as collateral. As will be more fully explained in other connections, grain "warehouse receipts" issued at the central elevators in the primary markets, when accompanied by an insurance certificate, are readily accepted by many banks as collateral for loans.[1]

The profits of the line elevator companies result from the sale of grain in the primary markets at a higher price than the price paid to the farmers. They sell to central grain jobbers or dealers, to speculators and to flour- and grist-mill operators, exporters, malt concerns, or cereal food manufacturers. They may sell their grain immediately after its purchase from the farmers, or they may hold it for a rise in price, and they may contract to deliver grain at the primary market

[1] Chaps. iv, xv, xvi.

even before they have purchased it from the growers. Ordinarily they aim to sell at a price which will yield them a reasonable trade profit on each bushel handled, rather than to hold grain in storage for a speculative future profit. To safeguard their trade profit they habitually base their country prices upon the prices prevailing at the primary market, deducting from the latter the freight rates and a price margin sufficient to cover expenses and yield a profit on the investment. Since the prices at the primary markets fluctuate, the line elevator companies do not, however, depend wholly upon the small price margin which is allowed. Many do not contract to deliver grain which they do not possess at the time of sale, or keep on hand grain which is not immediately sold, without protecting their trade profits by "hedging" in the speculative markets of the large grain exchanges. To again quote the report of the Bureau of Labor Statistics:

> When he has a quantity of wheat on hand he hedges in the grain market by selling a future; that is, he enters into a contract of sale for future delivery. Should the price of wheat advance he makes a profit on his wheat in stock and loses on his future when he closes it out. On the other hand, should the price of wheat decline, he loses on his wheat in stock but makes a profit on his future by buying on the market at a lower price to close it out. Thus, the speculative side of the grain market affords the dealer in actual grain an opportunity to do a comparatively safe and conservative business. Without the opportunity to deal in futures, conservative dealers state that they would not buy wheat in any considerable quantity except on a much wider margin and at a consequent lower price.

Since "hedging" is not peculiar to the local grain trade it will be more fully discussed on a later page.[1]

**Local Grain Dealers' Elevators.**—The manner of conducting the business of country elevators operated by independent local grain dealers is substantially the same as that described in connection with line elevator concerns, with the exception that they are not managed from headquarters located at the

[1] *See* chap. vii.

primary market and ordinarily sell through central commissionmen instead of through their own agents. The local grain dealers preceded the line elevator companies. Originally they operated independently of each other, and some of them still act individually, but many of them have for various reasons united into "local grain dealers' associations." The associations were originally formed in order to obtain favorable treatment from railroad carriers; to correct abuses in local grading and to induce farmers to sell their grain under a system of grading; to correct abuses at the primary markets in the matter of grading, inspection, weighing and "dockage" for unclean grain; and to induce the farmers to bring their grain to market in a better and cleaner condition. The organization of dealers' associations began prior to the rise of line elevator companies, but the desire to counteract the advantages of these companies became an additional motive. By 1900 some of the associations had become so strong that there were complaints charging arbitrary coercion of individual dealers, central commissionmen, railroads and farmers. The rise of line elevators and farmers' coöperative elevators has, however, deprived the local dealers' associations of much of their former influence.

**Farmers' Coöperative Elevators.**—Many of the present-day coöperative farmers' elevators are also operated substantially in the same manner as line or local dealers' elevators. In the past the farmers in establishing coöperative elevators frequently underestimated the expense and risks of the grain trade; they seldom hedged their transactions, and their attempts to market grain on too narrow price margins sometimes resulted in failure. In many instances they were, moreover, opposed by local grain dealers and line elevator companies, by central jobbers, dealers and commissionmen, and by the railroads, who regarded them as "irregular." Not all the farmers have learned by experience since 1889 when the first coöperative elevator began operation,[1] and consequently failures are not uncommon at the present time. Usually, however, the coöperative elevator concerns are now conservatively

[1] G. H. Powell: Coöperation in Agriculture, p. 127.

organized as regularly incorporated companies or joint-stock associations with a capital stock varying from $2,500 to $20,000 and with from 70 to 225 stockholders. They usually buy grain in the same way that private dealers do and distribute their profits as dividends, although when competition is keen they sometimes pay the primary market price less the freight rate, and assess operation costs against the stockholders in proportion to the quantity of grain contributed. They sometimes operate their elevators in connection with flour, feed, coal, lumber, fertilizer, farm machinery or other local business so as to reduce expenses and increase their profits.

The farmers' elevators, moreover, frequently have the advantage of handling a larger volume of grain at a given shipping point than their competitors, for price considerations being alike, the stockholders desiring large dividends sell to their own company. The articles of incorporations in some cases provide that members may sell their grain to outside firms only upon payment to the farmers' company of one cent on every bushel so sold, and many farmers who are not stockholders, realizing the effect which the coöperative elevator has upon country prices and grading, also sell to the farmers' company. As was previously mentioned the profits of a country elevator are affected greatly by the quantity of grain handled. The stockholders, moreover, being primarily interested in the sale of the grain which they individually grow are less dependent upon elevator profits than their competitors. Farmers' elevators are especially apt to be established at points where there is but one grain buyer, and at points where, although there are several buyers, the farmers are not convinced that they receive fair prices.

Although the number of line and grain dealers' elevators exceeds that of coöperative elevators, the latter have in some regions made rapid progress. It is stated that in 1913 there were 340 coöperative elevators in Iowa, 331 in North Dakota, 297 in Minnesota, 260 in Illinois, 225 in South Dakota, 204 in Nebraska and 137 in Kansas. There were relatively few in Missouri, Oklahoma and Texas, in the grain regions east of the Mississippi or in the Rocky Mountain and Pacific Coast

states. It is estimated that in 1913 there were over two thousand coöperative elevators operating in the United States as a whole, not including the coöperative grain warehouses which have been established on the Pacific Slope. In 1911 they handled not less than 270,000,000 bushels or about 40 per cent. of the grain shipped from those regions in which coöperative elevators have been constructed.[2]

The principal obstacles encountered by farmers' elevators have been mismanagement and competition with line elevator companies. The handling of larger quantities of grain by the latter, and their ability to recoup at one point the profits which they sacrifice at another, gives them an advantage alike over coöperative and grain dealers' companies which ordinarily operate individual elevators. In order to overcome this disadvantage the farmers' companies have been urged to form coöperative unions.

## The Local Grain Market in the Pacific Coast Region

The sale of grain by the farmers of the Pacific Coast region differs from the methods prevailing throughout the central western and eastern parts of the United States in various respects.

**Local Purchasing by Exporters.**—While the grain export trade conducted through the Atlantic and Gulf ports is handled by exporters who purchase their grain at the large primary and seaboard markets, Pacific Coast exporters frequently buy grain directly from the farmers. Their agents, who are

[1] H. J. Waters, President Kansas State Agricultural College: Annual Report of State Board of Agriculture of Missouri, 1913, p. 118:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Iowa ..... | 340 | Kan. ..... | 137 | Mich. ..... | 23 | Ore. ..... | 3 |
| N. D. .... | 331 | Wis. ..... | 53 | Wash. .... | 18 | Ark. ..... | 2 |
| Mo. ..... | 297 | Okla. ..... | 34 | Mo. ..... | 8 | Kan. ..... | 1 |
| Ill. ..... | 260 | Ind. ..... | 28 | Tex. ..... | 5 | | |
| S. D. ..... | 225 | Mont. .... | 27 | Colo. ..... | 5 | | |
| Neb. ..... | 204 | Ohio ..... | 26 | Idaho .... | 4 | Total... | 2,031 |

[2] G. H. Powell: Coöperation in Agriculture, pp. 122-123.

scattered throughout the local markets, purchase wheat and barley and forward it to the ports. The exporting concerns then attend to the chartering of vessels, the loading of the cargo, the securing of marine insurance, the payment of the ocean freight, and the sale of the grain to the foreign importer. It was stated by the Bureau of Statistics, Department of Agriculture, that a large part of the grain export trade of the Pacific Coast is concentrated in the hands of a few strong firms.

These exporters are more or less closely connected with grain dealers located in European markets, and who represent there the men who export from the United States; this relation is in some cases reversed—some Pacific Coast exporters are representatives of European firms. The European representative of the Pacific Coast exporter may sell a given lot of wheat before the exporter buys it for shipment or the exporter may buy it first and look for a purchaser afterwards. In either case both transactions are usually made within a short time of each other, and the exporter runs less risk of a fall in price than if he held his wheat a longer time before selling it.[1]

The purchases made by the exporter are of particular importance to the Pacific Coast wheat and barley grower, because the grain trade of the Pacific Slope is more largely dependent upon the foreign market than that of the grain regions located east of the Rocky Mountains.

**Handling of Grain in Sacks.**—Pacific Coast grain is mainly handled in sacks rather than in bulk. This practice, which in the past also prevailed in other regions of the United States, but which owing to its expensive and cumbersome nature has been largely abandoned, still persists in the Far West. Its retention is partly due to custom, but it is also due partly to the fear that it is not safe to load a vessel with bulk grain for the long voyage to European markets. One of the conditions of Pacific Coast marine insurance policies and grain-charter parties ordinarily is that grain cargoes shall be shipped in sacks. Since the export trade is so important

[1] F. Andrews: "Marketing Grain and Livestock in the Pacific Coast Region," Bureau of Statistics, Bulletin No. 89 (1911), p. 85.

in the Pacific Coast grain trade, these conditions influence the methods of handling most of the grain of the Far West—domestic as well as export. The grain is sometimes sacked several times, for when received at the port warehouses it "is frequently emptied from the sacks, run through an elevator for the purpose of cleaning or mixing, and is sacked again for shipment." [1]

**Relative Absence of Country Elevators.**—There are relatively few country elevators on the Pacific Slope, the grain in sacks being stored in warehouses and on open platforms. The sacks being easily handled by hand trucks, the warehouses require relatively little machinery. Some of them, especially the large warehouses at the ports, are, however, equipped with steam or electrically driven conveyors for stacking and loading the sacks of grain. Grain elevators have been erected at various places in the Pacific Coast region, for some of the grain is handled in bulk, and it has also been recognized that elevators facilitate the cleaning and mixing of grain.

**Coöperative Growers' Associations.**—Some of the grain of the Pacific Slope is sold through coöperative farmers' associations. The coöperative grain ventures which have been attempted in California since 1874 have in some instances met with failure, but at present there is an organization in that state known as the Grain Growers' Association of California which claims to have caused higher prices to be paid to the growers. In Oregon, Washington, and Idaho there are numerous coöperative grain warehouses, which differ from the coöperative elevators of the grain regions east of the Rocky Mountains in that, while they are operated by separate local organizations, their sales are made through a central union whose agents sell to exporters, to mills and to dealers who supply mills with grain.

**Price-quoting System.**—A minor feature of the Pacific Coast grain trade is that wheat and barley prices at many points are locally quoted in terms of 100 pounds. In Oregon, Washington and Idaho, wheat prices are quoted in terms of bushels of 60 pounds as in other wheat-growing regions of

[1] *Ibid.*, p. 90.

the United States, but barley is often sold by the "cental" (100 lbs.) or by the short ton (2,000 lbs.). Pacific Coast wheat when exported to England is usually sold in terms of "quarters" of 500 pounds, and barley in terms of quarters of 448 pounds gross weight.[1]

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(*See* references on pages 92, 93 designated by an *.)

[1] *Ibid.*, p. 86.

## CHAPTER IV

### PRIMARY AND SEABOARD GRAIN MARKETS: THE TERMINAL ELEVATOR SYSTEM

As the grain trade illustrates the manner in which a farm product grown by a large number of farmers throughout wide areas is first collected and sold at local markets, so it is also an excellent example of how such commodities are in many instances concentrated at a smaller number of large central markets before they are shipped to their final destination.

#### The Flow of the Grain Trade

**The System of Grain Markets.**—Most of the grain after it leaves the farms passes through a series of markets and shipping points. (1) The local markets which were described in the preceding chapter collect the grain from the growers; (2) the primary markets of the interior collect most of it from the local markets; (3) portions of the grain shipped out of the primary markets are sold, transshipped, or consumed at the seaboard markets, which are located at the country's principal ports of distribution and exportation, (4) at secondary wholesale markets throughout the United States and (5) at central markets in foreign countries. (6) Much grain in moving out of the primary markets is, moreover, transshipped en route at a group of interior points where grain is transferred rather than marketed. (7) Certain quantities of grain are retailed for feed or seed purposes at retail markets located throughout the United States or in foreign grain-importing countries. Much grain, however, is not retailed, but is sold in wholesale lots to flour and grist mills, malt houses, cereal manufacturers and other large consumers.

The organized grain trade, in so far as it is conducted in the central markets of the United States, is principally confined to the primary markets of the interior and the seaboard grain markets of the Atlantic, Gulf and Pacific coasts.

**Geographical Location of Primary Markets.**— As shown in Map No. III, a circle with its center at Peoria, Illinois, and its circumference drawn through Duluth and Wichita circumscribes all the principal primary grain markets of the United States. While their central western location places them adjacent to some of the country's greatest grain fields, there are vast grain-growing regions in the trans-Mississippi Valley, which are removed many hundreds of miles from the nearest primary market. They are located with special reference to transportation facilities, for they gather their grain supply from the thousands of local country markets. Most of them are situated either on the western heads of the Great Lakes or on the interior waterways, and all of them have been supplied with abundant railroad facilities.

From each of the primary markets numerous railroads radiate throughout the agricultural districts from which they obtain grain. Sometimes as many as twenty-five or more railroads, including many of the well-known Granger roads of the Central West, feed a single large market, and smaller quantities of grain are also received at some of these markets via lake or river. Each primary market is likewise located so that it may readily ship grain eastward or southward. The eastern and western trunk lines, the Great Lakes, and to a less extent the Erie Canal, regularly carry large volumes of grain from the primary markets of the West to the inland and seaboard markets of the Atlantic Coast, and another group of railroads and certain rivers carry smaller quantities to the inland and seaboard markets of the Gulf of Mexico. The manner in which Chicago, the largest primary market, receives and ships its supply of grain is clearly shown in the following balance sheet for the year 1913 (Table III):

TABLE

BALANCE SHEET OF

| | Receipts | | | | |
|---|---|---|---|---|---|
| | Wheat, Bushels | Corn, Bushels | Oats, Bushels | Rye, Bushels | Barley, Bushels |
| Lake | 4,439,000 | ..... | 2,042,000 | ..... | ..... |
| Illinois & Michigan Canal. | ..... | 55,000 | 17,000 | ..... | ..... |
| Chicago & N. W. Ry. | 6,869,000 | 25,276,000 | 24,539,000 | 754,000 | 10,531,000 |
| Illinois Central R. R. | 3,007,000 | 21,090,000 | 14,579,000 | 17,000 | 1,118,000 |
| Chic., Rock I. & Pac. Ry. | 4,297,000 | 16,595,000 | 23,298,000 | 170,000 | 2,945,000 |
| Chic., Burl. & Q'cy R. R. | 12,141,000 | 17,652,000 | 15,229,000 | 336,000 | 1,792,000 |
| Chicago & Alton R. R. | 1,985,000 | 5,702,000 | 3,916,000 | 97,000 | 340,000 |
| Chic. & East'n Ill. R. R. | 470,000 | 6,193,000 | 4,944,000 | 5,000 | 5,000 |
| Chic., Mil. & St. Paul Ry. | 7,945,000 | 16,031,000 | 16,727,000 | 1,187,000 | 9,414,000 |
| Wabash R. R. | 3,067,000 | 4,120,000 | 3,940,000 | 5,000 | 35,000 |
| Chic. Great Western R. R. | 3,359,000 | 4,395,000 | 6,822,000 | 273,000 | 2,950,000 |
| Atch., Top. & S'ta Fe Ry. | 952,000 | 4,212,000 | 2,746,000 | 14,000 | 43,000 |
| Soo Line | 854,000 | 45,000 | 796,000 | 113,000 | 2,408,000 |
| Elgin, Joliet & East'n Ry. | 8,000 | 1,365,000 | 1,097,000 | 7,000 | 6,000 |
| *East'n & S. E lines | 979,000 | 5,082,000 | 3,713,000 | 97,000 | 76,000 |
| Total receipts | 50,372,000 | 127,773,000 | 124,405,000 | 3,075,000 | 31,663,000 |
| Flour manufactured in the city (estimated) | ..... | ..... | ..... | ..... | ..... |
| In store and afloat in harbor, December 31, 1912 | 8,152,000 | 1,652,000 | 1,963,000 | 128,000 | 173,000 |
| Grand totals | 58,524,000 | 129,425,000 | 126,368,000 | 3,203,000 | 31,836,000 |

* The eastern and southeastern lines include the Wabash R. R. (east of Chicago), P. Ft., W. & C. Ry., P. C. C. & St. L. Ry., B. & O. R. R., G. T. W. Ry., N. Y. C. &

NO. III

## CHICAGO GRAIN TRADE, 1913

| | Shipments | | | | |
|---|---|---|---|---|---|
| | Wheat, Bushels | Corn, Bushels | Oats, Bushels | Rye, Bushels | Barley, Bushels |
| Lake—To Buffalo | 13,073,000 | 17,731,000 | 2,048,000 | ..... | ..... |
| To Erie | 110,000 | 75,000 | ..... | ..... | ..... |
| To Ogdensburg | 240,000 | 3,823,000 | 381,000 | ..... | ..... |
| To Fairport | ..... | ..... | ..... | ..... | ..... |
| To Port Huron | ..... | 781,000 | 1,000,000 | ..... | ..... |
| To other U. S. ports | 484,000 | 158,000 | ..... | ..... | ..... |
| To Depot Harbor | 32,000 | 1,537,000 | 2,315,000 | ..... | ..... |
| To Montreal | 1,609,000 | 45,000 | ..... | ..... | ..... |
| To Midland | 58,000 | 1,520,000 | 332,000 | ..... | ..... |
| To Tiffin | 266,000 | 2,351,000 | 189,000 | ..... | ..... |
| To Collingwood | ..... | 3,432,000 | ..... | ..... | ..... |
| To Kingston | ..... | 184,000 | ..... | ..... | ..... |
| To Prescott | ..... | 695,000 | ..... | ..... | ..... |
| To Pt. Colbourn | 656,000 | ..... | ..... | ..... | ..... |
| To other Canadian ports | ..... | 55,000 | ..... | ..... | ..... |
| Totals by lake | 16,528,000 | 32,387,000 | 6,265,000 | ..... | ..... |
| Chic. & Northwestern Ry. | 51,000 | 203,000 | 74,000 | 4,000 | 49,000 |
| Illinois Central R. R. | 378,000 | 121,000 | 321,000 | 29,000 | 30,000 |
| Chic. Rock. Isl. & Pac. Ry. | 612,000 | 1,239,000 | 926,000 | 8,000 | 66,000 |
| Chic., Burl. & Q'cy R. R. | ..... | ..... | ..... | ..... | ..... |
| Chicago & Alton R. R. | 23,000 | 49,000 | 10,000 | ..... | 2,000 |
| Chic. & East'n Ill. R. R. | 101,000 | 256,000 | 874,000 | 22,000 | 42,000 |
| Chic., Mil. & St. Paul Ry. | 50,000 | 308,000 | 16,000 | 1,000 | 36,000 |
| Wabash R. R. (W. of Chi). | 14,000 | 1,000 | ..... | 1,000 | ..... |
| Chi. Great Western R. R. | ..... | ..... | ..... | ..... | ..... |
| Atch., Top. & S'ta Fe Ry. | ..... | 1,000 | 2,000 | ..... | ..... |
| Soo Line | 2,000 | 1,000 | 19,000 | ..... | 48,000 |
| *East'n and S. E. lines | 28,240,000 | 58,024,000 | 89,870,000 | 1,612,000 | 7,515,000 |
| Total shipments | 45,999,000 | 92,590,000 | 98,377,000 | 1,677,000 | 7,788,000 |
| In store and afloat in harbor, December 31, 1913 | 7,277,000 | 4,039,000 | 11,674,000 | 415,000 | 318,000 |
| City consumption and unaccounted for | 5,248,000 | 32,796,000 | 16,317,000 | 1,111,000 | 23,730,000 |
| Grand totals | 58,524,000 | 129,425,000 | 126,368,000 | 3,203,000 | 31,836,000 |

*Pere Marquette R. R., C. C. C. & St. L. Ry., Michigan Central R. R., L. S. & M. S. Ry., St. L. Ry., C. & E. R. R., C. I. & S. Ry., and the C. I. & L. Ry.

**The Volume of Business at the Primary Markets.**—The relative importance of the primary grain markets varies widely. The receipts of wheat are greatest at Minneapolis, Duluth, Chicago, Kansas City, St. Louis and Omaha; those of corn at Chicago, Omaha, St. Louis, Kansas City and Peoria; those of oats at Chicago, St. Louis, Minneapolis, Omaha and Milwaukee; barley at Minneapolis, Chicago, Milwaukee and Duluth; and rye at Minneapolis, Milwaukee, Chicago and Duluth. The aggregate grain receipts of the sixteen principal primary markets in the years 1905, 1910 and 1913 are shown in Table IV. The combined receipts of these markets in 1913 reached the amazing total of 1,063,602,902 bushels.

TABLE IV

RECEIPTS AND SHIPMENTS OF GRAIN AT SIXTEEN LEADING PRIMARY GRAIN MARKETS.*

| Markets | Receipts (in bu.) | | | Shipments |
|---|---|---|---|---|
| | 1905† | 1910† | 1913‡ | 1910† |
| Chicago | 260,675,803 | 258,830,450 | 337,288,000 | 182,928,500 |
| Minneapolis | 138,370,220 | 152,824,990 | 185,250,340 | 59,782,440 |
| Kansas City | 68,298,200 | 67,072,000 | 66,795,950 | 49,489,800 |
| St. Louis | 60,781,698 | 66,159,123 | 80,498,694 | 45,353,450 |
| Duluth | 51,317,351 | 49,883,152 | 112,560,717 | 45,315,285 |
| Milwaukee | 37,749,100 | 47,230,563 | 59,464,630 | 29,500,846 |
| Omaha | 34,523,500 | 43,354,100 | 68,574,700 | 33,391,500 |
| Peoria | 29,093,000 | 33,583,216 | 34,574,700 | 28,309,096 |
| Louisville | 22,602,700 | 21,317,857 | 22,542,783§ | 11,423,652 |
| Cincinnati | 30,103,717 | 20,288,300 | 21,153,312 | 14,290,165 |
| Indianapolis | 9,240,500 | 16,155,500 | 23,975,300 | 10,490,125 |
| Toledo | 24,400,700 | 13,076,700 | 14,733,800 | 7,073,900 |
| Cleveland | 21,981,047 | 12,118,004 | 13,290,463 | 2,685,406 |
| Detroit | 14,975,282 | 8,802,499 | 7,529,900 | 2,407,668 |
| Wichita | 5,000,000‖ | 8,762,100 | 9,957,220§ | 1,589,200 |
| Little Rock | 4,409,200 | 3,471,000 | 5,513,000§ | 948,000 |
| Total | 813,642,018 | 822,929,554 | 1,063,602,902 | 524,979,033 |

* Includes wheat, corn, oats, barley and rye. Calendar Years.
† U. S. Monthly Summary of Commerce and Finance, Dec., 1905 and 1910.
‡ N. Y. Produce Exchange, Annual Statistical Report (1913;) Chicago Board of Trade, Annual Report (1913), etc.
§ Fiscal year 1912.
‖ Approximate.

During the decade ending in 1913 the annual receipts of grain at Chicago increased 40 per cent., at Minneapolis 47.8 per cent., and at Kansas City and Milwaukee 52 per cent. The grain receipts at Duluth underwent the even more rapid increase of 172 per cent., those at Omaha 128 per cent., and those at Indianapolis 174 per cent. On the contrary the quantity of grain annually received at St. Louis, although it was in 1913 exceeded only by the receipts at Chicago, Minneapolis and Duluth, increased but 17 per cent. during the decade. The increases at Louisville, Cincinnati, Wichita and Little Rock were likewise small, and the annual receipts at Peoria, Toledo, Cleveland and Detroit declined somewhat.

**Competition Between Primary Markets.**—Each primary market ordinarily obtains its supply of grain from a particular grain-growing section or sections. There is, however, active competition between the various markets because there is no large district which does not have the alternative of shipping its grain to several markets, and because the grain which is ordinarily shipped to a particular center may in case of manipulation of prices or extraordinary demand move to some other primary market. The relation between different productive areas and primary grain markets is shown in Map No. V. The grain from location No. 1 usually moves to Minneapolis and Duluth, but the railroad carriers are so situated that in case prices for any reason get out of range the grain will move to Chicago. Grain produced in section No. 2 is ordinarily shipped either to Chicago or Milwaukee, but slight price variations at times draw the output of the western portion to Minneapolis or Duluth. Region No. 3 is tributary to Milwaukee and to various smaller markets such as Ashland, Manitowoc or Green Bay. The grain produced in district No. 4 may move either to Kansas City, St. Louis, Omaha or Chicago. Territory No. 5 may ship either to Chicago or St. Louis, and the grain from territory No. 6 usually moves to St. Louis, but may move to Chicago in case prices are badly out of line. Region No. 2 A ordinarily ships its grain to Chicago or Milwaukee, but may also ship to other primary markets north or south, and the grain produced in the area

designated 4 or 5 ordinarily moves to Kansas City, St. Louis, or Chicago, but may, likewise, go to other primary markets. The grain produced in district No. 7 usually moves either to Detroit or Toledo.

The competition between the primary markets is of special importance to the growers and local shippers of grain, for it affects the prices which they receive. In practice the prices at the various primary markets do not remain out of parity for a long period of time because certain dealers or "arbitrageurs" buy or sell at any of the grain exchanges with a view to making a profit out of such price differences as occasionally occur, but their ability to conduct such transactions on a large scale, even though no actual shipment of grain may be made, depends upon the ability of numerous producing regions to ship grain to any one of several primary markets.

**Functions of Primary Markets.**—By concentrating a large part of the country's available grain supply, the primary markets of the interior make possible an organized grain market. They are equipped with large terminal elevators where grain may be stored, cleaned, mixed and otherwise handled, where it may be properly inspected, graded and weighed, and from which it may readily be shipped to all parts of the world. They are equipped with organized exchanges where grain may at all times be bought and sold in accordance with established rules, and where speculation may be conducted in an orderly manner. By concentrating large quantities of grain and by providing a continuous market, they facilitate the maintenance of a world's price for grain. The primary markets, moreover, that are important milling or malting centers, provide a final market for some of the grain which is concentrated in them.

**Shipping Routes.**—The quantities of grain shipped out of the principal primary markets in 1910 is shown in Table IV. The primary markets as a whole have in recent years shipped from 60 to 65 per cent. of their receipts, the remainder being locally consumed. The proportion of the receipts shipped out of Chicago, Duluth, St. Louis, Kansas City, Omaha and Peoria is, however, greater than the average for all the primary

MAP V.—TERRITORIAL COMPETITION AMONG PRIMARY GRAIN MARKETS.

## EXPLANATION OF NUMBERS ON MAP.

1. Tributary, as a general rule, to Minneapolis and Duluth. At extraordinary times wheat from this territory moves to Chicago.

2. Wheat from this location moves to either Chicago or Milwaukee. At times, however, western portion will go to Minneapolis or Duluth. A portion of the territory is extremely close and a slight variation will take it away from one market to another.

3. Wheat from this location is naturally tributary to Milwaukee, Ashland, Manitowoc, or Green Bay.

4. Wheat from this location is tributary to Kansas City, St. Louis, or Chicago. A slight variation in prices will take it away from one market to another.

5. Territory is tributary to either Chicago or St. Louis. Any slight variations in the market will pull from one to another.

6. This territory tributary to St. Louis, unless Chicago market is out of line.

7. Wheat from this territory as a general rule goes to Detroit or Toledo.

2A. Wheat from this section moves primarily to Chicago or Milwaukee, but is also quite liable to go to other markets north or south.

4 or 5. Wheat from this section moves primarily to Kansas City, St. Louis, or Chicago, but may go to other markets.

markets, while in the case of Minneapolis, Louisville, Cincinnati, Toledo, Cleveland, Detroit, Wichita and Little Rock it is less.

The shipments may reach the seaboard and interior markets of the East over various routes: (1) The grain may move over the all-rail route, for all the eastern trunk lines conduct a grain-carrying business. (2) It may move eastward over the lake-rail route. Much grain is regularly transshipped from railway cars and elevators to lake carriers at Chicago, Milwaukee, Duluth and various smaller transshipment points on Lakes Superior and Michigan, and after arriving at Buffalo or other minor grain-receiving ports such as Erie, Ogdensburg or Fairport, is again transshipped from the lake to the rail carriers. (3) It may move to the East over the lake-canal route, the grain being transshipped to Erie Canal boats or barges at Buffalo. (4) At certain Lake Michigan points grain is transported across the lake by so-called "transit lines."[1] Two classes of vessels are used in the transit service, one consisting of ordinary grain vessels which transship grain in bulk through elevators from various points on the western to various points on the eastern shore of Lake Michigan, and the other of car ferries which carry across the lake in railroad cars loaded with grain. In either case the grain is carried to the eastern markets by rail. The shipping points include Milwaukee and smaller ports such as Manitowoc, and the receiving ports include points such as Ludington, Muskegon, Frankfort and Grand Haven, Michigan. (5) Certain quantities of American grain are exported to European markets via the Lake—St. Lawrence River route. Montreal is one of the largest eastern grain ports, receiving over 50,000,000 bushels annually. Most of these receipts, however, consist of Canadian grain, the export of American grain through Canada in 1914 amounting to only 6,821,000 bushels.[2]

The all-rail shipments predominate at those primary mar-

[1] "Grain Movement in the Great Lakes Region," Bureau of Statistics (Department of Agriculture), Bulletin 81, pp. 30-31.

[2] Re-exports of foreign grain as reported in the Annual Report of the Dominion of Canada on Trade and Navigation (1914), p. 217.

kets which are not located on the Great Lakes, and also at Chicago, which is so situated that the railroads need not make a lengthy detour in order to reach the eastern grain markets. The shipments from Chicago respectively by lake and rail are shown in Table III. The lake-rail route predominates at the various lake shipping points extending from points north of Milwaukee to Duluth, for at these points the lake-rail route has a pronounced geographical advantage. At Milwaukee the shipments are more evenly divided between the lake and rail routes. The volume of grain transshipped eastward via the Erie Canal has steadily declined in recent years, less than 9,500,000 bushels being shipped from Buffalo by canal in 1913, and less than 4,500,000 bushels arriving at tidewater over the canal route. In that year the total grain receipts at New York, the largest seaboard market, aggregated 94,625,020 bushels, 37,551,450 bushels arriving via the all-rail route, including the grain transshipped across Lake Michigan by the transit lines, 48,893,125 via the lake-rail route, 4,371,700 by canal, and 3,808,745 by various river and coastwise water routes.[1] The average freight charges per bushel of wheat from Chicago to New York have during the years 1900 to 1913 varied from 9.60 to 11.70 cents on the all-rail route, from 5.02 to 7.01 cents on the lake-rail route, and from 4.42 to 6.68 cents exclusive of Buffalo charges on the lake-canal route.[2]

The movement from the primary markets to the seaboard markets of the Gulf is mainly an all-rail movement. Small quantities are shipped southward on the Mississippi-Ohio River system, but since 1903 such shipments have not exceeded 400,000 bushels annually.

**Milling-in-transit.**—Much grain shipped to mills is handled on so-called milling-in-transit privileges, the carriers granting a through rate to final destination even though the grain is unloaded en route and converted into flour and foodstuffs. Certain precautions are taken to avoid the abuse of

[1] New York Produce Exchange, *Annual Statistical Report* (1913), p. 9.

[2] Statistical Abstract of the U. S. (1913), p. 297.

the privilege, for the through rate rightfully applies only to such weights of flour and foodstuffs as are the equivalents of the grain to which the privilege was extended subject to reasonable allowances for natural shrinkage in weight resulting from milling. The milling-in-transit privilege in case of interstate shipments is subject to supervision by the Interstate Commerce Commission. It may be granted free of charges other than the regular freight rates, or special charges may be collected, but the Commission has ruled that such charges must be reasonable and that no unfair discriminations or fraud may legally be practiced in its administration.

**The Seaboard Markets.**—The grain receipts and exports of the principal seaboard markets are shown in Table V. On the eastern seaboard there are New York, Baltimore, Philadelphia, Boston, Portland (Maine) and Newport News; on the Gulf, New Orleans and minor grain-shipping ports such as Galveston, Mobile, Port Arthur, Sabine and Pensacola; and on the Pacific Coast, Puget Sound ports, San Francisco and Portland, Oregon. Grain is also exported by lake through

TABLE V

RECEIPTS AND EXPORTS OF GRAIN* AT LEADING SEABOARD MARKETS†

| Market | Receipts at‡ | | | Exports from 1913 |
|---|---|---|---|---|
| | 1905 | 1910 | 1913 | |
| New York | 86,978,816 | 54,149,556 | 90,999,975 | 41,907,000 |
| Baltimore | 31,230,770 | 20,993,895 | 57,299,815 | 41,665,000 |
| Philadelphia | 24,091,231 | 17,372,275 | 35,978,020 | 10,185,000 |
| Boston | 24,747,307 | 13,666,995 | 32,128,796 | 6,856,000 |
| New Orleans | 31,023,070 | 12,008,000 | 21,564,068 | 19,016,000 |
| San Francisco | 16,459,697 | 19,350,616 | 15,491,915 | 5,030,000 |
| Puget Sound | ..... | ..... | ..... | 5,883,000 |
| Portland, Ore | ..... | 14,607,500 | 31,279,150 | 10,055,000 |

* Includes wheat, corn, barley, oats and rye.

† From New York Produce Exchange, Annual Statistical Reports; U. S. Monthly Summary of Commerce and Finance; U. S. Commerce and Navigation Report (1913); Merchants Exchange of St. Louis, Annual Reports.

‡ Calendar Years.

the Welland Canal and via the St. Lawrence River from Chicago, Duluth, Detroit and other Great Lake ports.

The large eastern seaboard markets distribute grain throughout the East, export grain to foreign markets, and act as ports through which grain exported from the interior is shipped abroad. To accomplish these functions they are equipped with terminal elevators and organized grain exchanges in much the same way that the primary markets are equipped. Their principal grain business is gradually becoming one of domestic distribution rather than of foreign exports, for the entire grain-export trade of the United States has declined from 378,686,000 bushels in 1900 to 193,786,000 in 1913. The European War has caused a temporary increase in exports, but the home needs for grain and flour have during the twentieth century increased more rapidly than the country's grain crop.

The Pacific seaboard markets, in addition to domestic distribution and foreign exportation of grain, also act as primary, and, in many instances, as local grain markets. As was described in the previous chapter, the system of grain marketing on the Pacific Slope differs widely from the system prevailing east of the Rocky Mountains. There are no primary markets in the interior of Washington, Oregon and California, the grain being shipped directly from the local shipping points to the seaboard markets over rail or river routes. It is there sold to local consumers, is distributed to western markets by rail or coastwise carriers, or is exported to European and Oriental markets. Some Pacific Coast grain, chiefly barley, is shipped to the eastern markets of the United States, and it is possible that somewhat larger quantities will be shipped to those markets now that the Panama Canal has been opened to sea-going vessels.

### Activities and Management of Terminal Elevators

No mechanism of the primary grain markets is so important as the terminal elevator system. It has indeed been

stated that "the history of the primary market has been the history of the terminal elevator systems."

**The Functions of Terminal Elevators.**—The terminal elevators are the country's greatest grain storehouses. Their principal function is to provide storage facilities for much of the vast quantities of grain which are sold by the growers during the months immediately following the harvesting seasons and most of which cannot find storage in the relatively small country elevators. Public terminal elevators store grain for their owners who are mainly grain dealers, and also for any other persons who desire to store grain subject to the charges and conditions imposed by the state, the grain exchanges and the elevator companies. Private elevators—those connected with mills, malt houses, linseed oil companies and other industrial concerns or grain interests and not open to the public—also store great quantities of grain for the concerns which own or operate them.

Terminal elevators, moreover, facilitate the shipment of grain, for many of them have both rail and water connections and all of them are so connected with the railroads that cars arriving from or destined to any part of the country can readily be switched to or from them. The elevators are so equipped that grain in bulk can rapidly and at little cost be loaded into or unloaded from railroad cars or vessels. Some of them are specially constructed to transfer grain from railroad car to lake vessel or in the opposite directions. They also facilitate the inspection, grading and weighing of grain, and some of them the cleaning, drying and mixing of grain. They promote the work of the grain exchanges and the various functions of primary markets which were previously mentioned. (*See* page 56.) The central elevators located at inland transfer points such as Buffalo, and at the seaboard markets, perform the same functions as those located at the primary markets of the interior, but in some cases their principal use is the transfer rather than the storage of grain.

**Construction and Capacity of Terminal Elevators.**—In order to perform their various functions expeditiously it follows that the terminal elevators must be larger than the coun-

try elevators from which they obtain their supply of grain, and that they must be equipped with a view to handling and storing larger quantities of grain. Twenty-two of the elevators of Chicago, for example, have a storage capacity of one million or more bushels each, and one of them has a capacity of three and another of five million bushels. Terminal elevators are designed in widely varying ways, and many of those built during the last decade are models in design, equipment and construction. They are variously built of steel, concrete, brick and stone. Their equipment may be driven with electricity or steam, they may receive railroad cars alongside or within tunnels, and their storage bins may be provided within the main structure or partly within annexed storage tanks or towers. They are variously equipped with hoppers, endless chain carriers, belt conveyors, power shovels, grain spouts, scales, cleaning machines, dryers, blowers and scouring plants.

The total elevator capacity of Chicago is nearly 59,000,000 bushels, of Minneapolis nearly 41,000,000, Duluth over 32,250,000, Milwaukee 15,500,000, St. Louis 12,000,000, and Kansas City 11,250,000. Buffalo, being the principal point of transfer for lake grain, has an elevator capacity of over 22,000,000 bushels. The elevator capacity of the eastern seaboard markets is less than that of the primary markets of the interior, because their need for vast storage capacities is smaller. Not only do they handle smaller quantities of grain, but much of the grain exported merely passes through their elevators as a means of transfer from railroad car to ocean carrier. The elevator storage capacity of New York is 11,305,000 bushels, of Baltimore 5,100,000, of New Orleans 5,180,000, and of Philadelphia 4,388,000.

**Elevator Ownership.**—Prior to 1887 the public elevators of Chicago were mainly owned or operated by the grain-carrying railroads and by warehousemen. In either case they were operated by concerns whose sole interest in them was the warehousing or transfer of grain. About 1885, however, the railroads made rules permitting the sale of grain in the cars. They allowed twenty-four hours for inspection and seventy-two hours for its removal from the cars, and their former

demurrage charges were discontinued. The amount of track selling and selling by sample, and the volume of grain passing through Chicago without being unloaded then became so large that the railroads centering at Chicago and owning elevators and other expensive terminal properties there were confronted by a threatening situation. At the same time the southwest movement of the winter wheat and corn districts and the movement of export grain to the Gulf began to favor St. Louis, and the newer markets of the trans-Mississippi Valley, and the northwest movement of the spring wheat belt favored Minneapolis and Duluth. The railroads centering at Chicago, fearing the Interstate Commerce Act, which was enacted in 1887, and the probability of hostile public sentiment, did not feel able to return to the old regulations which had practically compelled the storage of grain in their terminal elevators. They therefore decided to sell or lease their terminal elevators, as well as such country elevators as they owned, to various central grain dealers. Since it would be to the interest of these dealers both as grain dealers and as elevator concerns to fill their elevators with grain, the position of Chicago as a grain market and the grain traffic of the railroads would be maintained. By 1894 the shifting of public elevators from railroads and warehousemen to grain dealers had been largely accomplished, and thereafter the elevator concerns controlled a large share of the grain trade of Chicago.

At present most of the public elevators in other primary markets as well as in Chicago are operated by large grain dealers. Some elevators are still operated by concerns which are primarily in the business of warehousing, and the railroads, also, operate some of the public elevators at the primary and seaboard markets and at transshipment points. Railroad ownership is confined mainly, though not entirely, to large transfer elevators used to transship grain to or from railroad cars, lake vessels, canal boats and ocean-carriers.

In addition to the public elevators, there are many private elevators which do not conduct a public warehousing business. They are owned and operated principally by flour and grist mills, malting, cereal food, linseed, yeast and other

industrial concerns, and by grain dealers who use them solely in their own grain business.

Since the elevators at the primary markets are owned or operated by a relatively small number of warehousemen, most of whom are grain dealers, the amount of competition within any one of the primary markets is smaller than it was in the past, when the bulk of the grain stored in the elevators was owned by a large number of dealers who did not own elevator properties. The amount of competition has, moreover, at times been further controlled at some of the primary markets and transshipment points by the formation of elevator associations, pools or combinations.[1] That such coöperation has been generally practiced at all the large grain markets, or that it has had a general effect upon grain prices, has not been established. The reduced competition within the individual grain markets is largely counterbalanced by the competition which exists between the primary markets.

**Regulation by the States.**—Public terminal elevators are in some states subjected to state regulation in much the same manner that the charges and services of common carriers are publicly controlled. The railroad and warehouse laws of Minnesota *define public elevators* as "all elevators or warehouses located within the switching limits of St. Paul, Minneapolis and Duluth, and other points in the state which are now or may hereafter be designated as terminal points in which grain is received for storage in bulk, and that of different owners mixed together or so stored that the identity of the different lots or parcels is not preserved." [2] In Illinois public elevators are divided into three classes, the extent of public regulation varying for the different classes. Class "A" includes all warehouses and elevators located in cities of at least 100,000 in-

[1] *See* Proceedings of N. Y. Barge Canal Terminal Commission, vol. i; "Grain Exchanges," Hearings before House Committee on Rules on House Resolution 24, Mar. 3-7, 1914; Testimony taken by Interstate Commerce Commission Oct. 15, Nov. 23, 1906, in matter of Relations of Common Carriers to the Grain Trade, Senate Document 278, 59th Cong., 2d Sess.; and Report of Bureau of Corporations on Transportation by Water, Part II.

[2] General Statutes, Minnesota (1913), chap. 28, Sec. 4435.

habitants and in which grain is stored in bulk, and grains of different owners are mixed together, or their identity is lost. Class "B" includes all other elevators and warehouses where grain is stored in bulk and is mixed together; and Class "C" includes all other elevators and warehouses where property of any kind is stored for pay.[1] The grain inspection and weighing law of Missouri defines public warehouses as "all buildings, elevators or warehouses located in any territory wherever grain inspection and weighing may be established by the state board of railroad and warehouse commissioners, in accordance with the provisions of this article, owned or operated, or which hereafter may be owned or operated by any person or persons, association, co-partnership or corporation and used for storing, transferring, handling or mixing the grain of different owners." [2] The three definitions given serve to illustrate that public elevators are more comprehensively defined in some states than in others. All the definitions, however, include the elevators of primary grain markets in which grain of different owners is stored in bulk and mixed so that its identity is lost.

The *methods and extent of the control* exercised by the states over public terminal elevators varies. It is a common practice, however, (1) to prohibit all discrimination in charges and services; (2) to require public elevators to receive all grain offered to the extent of their capacity, subject to reasonable exceptions as to damp, musty or other grain not in proper condition for storage; (3) to prohibit the mixing of different grades or otherwise transferring grain belonging to persons other than the proprietors of the elevators; (4) to require the licensing of public elevators and the bonding of elevator concerns; (5) to require the posting of elevator charges at stated times and to prohibit their increase during the following year; (6) to permit grain owners and inspectors to examine stored grain at any reasonable time; (7) to establish the lien which the warehouseman has on stored grain in case of failure to pay storage or other lawful charges; and (8) to place the

[1] Illinois Statutes (1913), chap. 114, Sec. 8965.

[2] Inspection and Weighing Act of April 12, 1907, Sec. 7625.

public elevators at the primary markets under the general supervision of the state railroad and warehouse commission, public utilities commission, or other public authority, as to maximum elevator charges, the establishment of grades and grading rules, inspection and weighing fees, licensing and bonding, rules for the receipt, care and delivery of grain, rules for the issue, registration and cancelation of warehouse receipts, and certain other matters affecting the grain trade.

(9) Public terminal elevators are commonly required to post or publish a weekly statement of the amount of each kind and grade of grain in store at the close of the previous week, and to file a similar statement with a specified public official. Each public warehouseman is also required to make a daily report to the same official of the following information:

The amount of each kind and grade of grain received in store in such warehouse on the previous day, also the amount of each kind and grade of grain delivered or shipped by such warehouseman during the previous day, and what warehouse receipts have been canceled, upon which the grain has been delivered on such day giving the number of each receipt, the amount, kind and grade of grain received and shipped upon each, also how much grain, if any, was so delivered or shipped and the kind and grade, for which warehouse receipts had not been issued and when and how such unreceipted grain was received by them, the aggregate of such reported cancellations and delivery of unreceipted grain, corresponding in amount, kind and grade with the amount so reported delivered or shipped. They shall also, at the same time, report what receipts, if any, have been canceled, and new ones issued in their stead as herein provided for. And the warehouseman making such statements shall, in addition, furnish the card registrar any further information regarding receipts issued or canceled that may be necessary to enable him to keep a full and correct record of all receipts issued and canceled, and of grain received and delivered.[1]

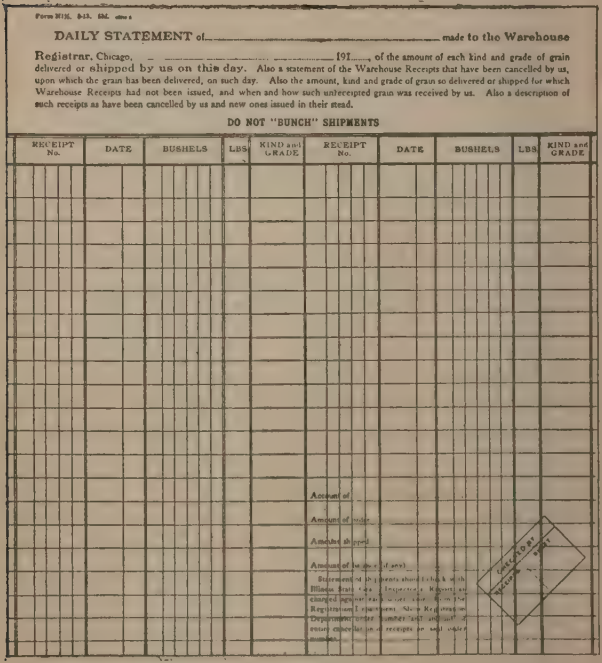
A copy of the daily report of grain shipments required in Chicago is shown in Form No. 1.

[1] Illinois Statutes (1913).

(10) A common requirement is that the grain received at and shipped out of the public terminal elevators shall be graded and the inspection certificates issued exclusively by state grain inspectors.[1]

(11) The weighing of grain at the elevators is ordinarily

Form [illegible]



**DAILY STATEMENT** of _____ made to the Warehouse

**Registrar**, Chicago, _____ 191__, of the amount of each kind and grade of grain delivered or shipped by us on this day. Also a statement of the Warehouse Receipts that have been cancelled by us, upon which the grain has been delivered, on such day. Also the amount, kind and grade of grain so delivered or shipped for which Warehouse Receipts had not been issued, and when and how such unreceipted grain was received by us. Also a description of such receipts as have been cancelled by us and new ones issued in their stead.

**DO NOT "BUNCH" SHIPMENTS**

| RECEIPT No. | DATE | BUSHELS | LBS | KIND and GRADE | RECEIPT No. | DATE | BUSHELS | LBS | KIND and GRADE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Account of _____

Amount of order _____

Amount shipped _____

Amount of [illegible] (if any) _____

Statement of shipments should check with Illinois State Grain Inspector's Report as charged against each order [illegible] Registration Department. Show Registration Department order number and amount of entire cancellation receipts on said order number.

CHECKED BY
RECEIVED BY

Form 1

placed under state control to some extent. The scales are usually subject to state inspection, and the maximum weighing charges regulated by law or authorized public authority. In some states the grain bought and sold at the primary mar-

[1] *See* chap. xiii.

CERTIFICATE.

*Grain Weighing Department*

F. H. TEDFORD, Chief Inspector of Grain. FOR THE STATE OF MISSOURI.

St. Louis, _____ 190__

| CAR No. | INITIAL | PLACE WEIGHED. | CONTENTS | STATE WEIGHTS Pounds | REMARKS |
|---|---|---|---|---|---|
| | | | | | |

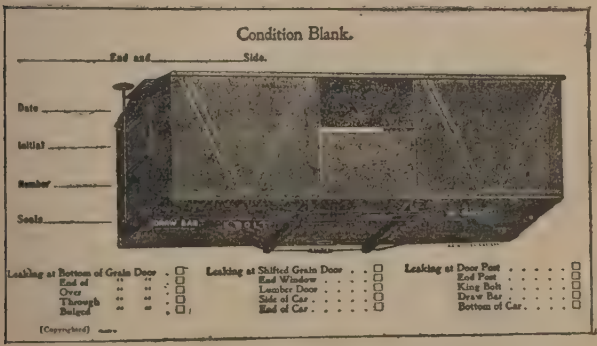
*Certified Correct as Weighed in Hopper Scales.*

[illegible]

Per _____

FORM 2

kets is weighed by, and weight certificates are issued by, state weighmasters. Form No. 2 contains the reproduction of a weight certificate such as is issued by the state of Missouri.




FORM 3

(12) The weighmasters or grain inspectors are in some states required to make reports, either on the back of the weight certificate or on a separate blank, showing the condition of the grain cars weighed. A reproduction of the "report of defective and leaky condition of cars" required from the

FORM A. SM

*Presented for Registration by*

CHECKED BY
RECEIPTS | APP. AND BOOK

*In* *Elevator.*

Enter each Car Number and Initial of Car.

Enter TOTAL Number of Bushels on each Receipt only.
Enter Receipts of One Date only.

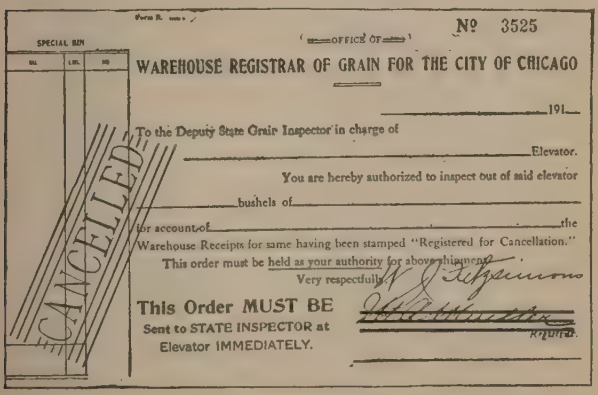
*CHICAGO,* *191*

REGISTER RECEIPTS BEFORE CIRCULATING

| NO. OF RECEIPT | DATE OF RECEIPT | INITIAL | CAR NUMBER | INITIAL | CAR NUMBER | BUSHELS | LBS. | GRADE AND KIND |
|---|---|---|---|---|---|---|---|---|
| | | To Register, Split Balance, Mark, or Release, Sample Enter Number of Original Sample Slip. | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | |

deputy weighmasters at Chicago by the State Grain Inspection Department of Illinois is contained in Form No. 3.

(13) Public grain elevators are commonly required to issue elevator or "warehouse receipts" covering all the grain publicly stored in them. The grain states usually have laws either permitting or requiring the issue of negotiable or transferrable warehouse receipts, and in some states the receipts are


SPECIAL BIN

CANCELLED

Form R.

Nº 3525

OFFICE OF

WAREHOUSE REGISTRAR OF GRAIN FOR THE CITY OF CHICAGO

191

To the Deputy State Grain Inspector in charge of

Elevator.

You are hereby authorized to inspect out of said elevator

bushels of

for account of the

Warehouse Receipts for same having been stamped "Registered for Cancellation."

This order must be held as your authority for above shipment.

Very respectfully,

This Order MUST BE

Sent to STATE INSPECTOR at

Elevator IMMEDIATELY.

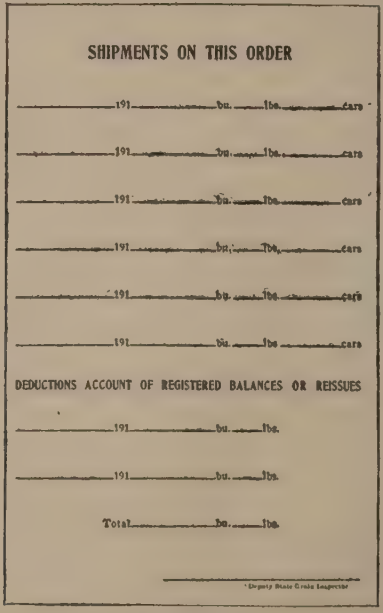
Registrar.

FORM 6 (front)

negotiable unless plainly marked otherwise. Upon the presentation of properly indorsed negotiable receipts which were issued for grain stored in bulk and mixed with other grain of the same grade so as to lose its identity, the elevatormen are required to deliver grain of the grade specified in the receipt. When, however, grain is stored in special bins so as to retain its identity, and in some states such bins must be provided when requested by owner of the grain, a special warehouse receipt is required and the grain delivered must be the identical grain for which the receipt was issued.

The grain states penalize severely the fraudulent issue of warehouse receipts, but for further precaution some of them in addition require that they shall be registered with a state

grain registrar at the time of issue, and be canceled by him upon delivery of the grain which they represent. The public elevators of Chicago are required to report all receipts issued within twenty-four hours to the State Registrar upon Form No. 4. They are prohibited from delivering any grain upon



SHIPMENTS ON THIS ORDER

_____ 191_____ bu. ____ lbs. _____ cars

_____ 191_____ bu. ____ lbs. _____ cars

_____ 191_____ bu. ____ lbs. _____ cars

_____ 191_____ bu. ____ lbs. _____ cars

_____ 191_____ bu. ____ lbs. _____ cars

_____ 191_____ bu. ____ lbs. _____ cars

DEDUCTIONS ACCOUNT OF REGISTERED BALANCES OR REISSUES

_____ 191_____ bu. ____ lbs.

_____ 191_____ bu. ____ lbs.

Total_____ bu. ____ lbs.

_____

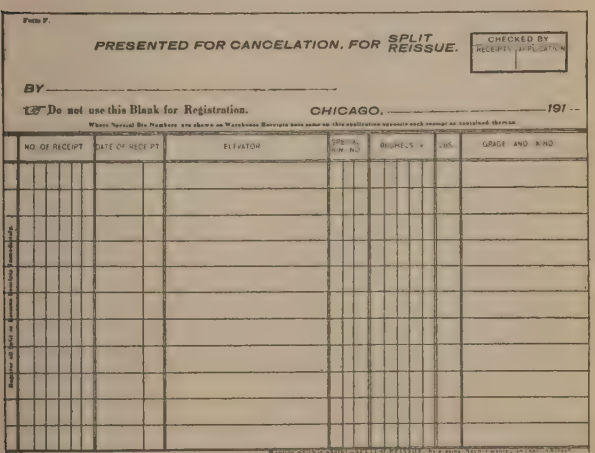
Deputy State Grain Inspector

FORM 6 (back)

such receipts unless they are stamped or plainly marked "registered for cancelation," and after the grain has been delivered the elevatormen are within twenty-four hours required to report the canceled receipts to the Registrar on Form No. 5. The grain, moreover, may not be delivered before it has been "inspected out" of the elevator by a state grain inspector, who acts upon receipt of an "order" from the Registrar (Form No. 6). Should it be desired to reissue any out-

standing receipts, or "split" them, i. e., issue several new for one outstanding receipt, the old receipts must be duly canceled and must be reported to the Registrar on Form No. 7.

The *form of warehouse receipts* is in some states fixed by law. The warehouse receipt acts of Minnesota (1913) and



Form F.

PRESENTED FOR CANCELATION. FOR SPLIT REISSUE.

| CHECKED BY | |
|---|---|
| RECEIPTS | APPLICATION |
| | |

BY _____

☞ Do not use this Blank for Registration. CHICAGO. _____ 191 --

Where Special Bin Numbers are shown on Warehouse Receipts note same on this application opposite each receipt as contained thereon.

| NO. OF RECEIPT | DATE OF RECEIPT | ELEVATOR | SPECIAL BIN NO. | BUSHELS | LBS. | GRADE AND KIND |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Register all Split or Reissue Receipts Immediately.

Mention which is wanted—SPLIT or REISSUE. Be sure that this is wanted on Split Receipts.

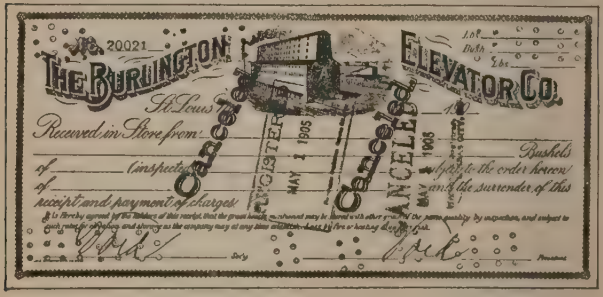
FORM 7

Illinois (1907), for example, provide that the receipts shall contain the following provisions:

1. The location of the warehouse in which the grain is stored.
2. The date of issue.
3. A consecutive number.
4. A statement whether the grain received will be delivered to bearer, to a specified person, or to a specified person or his order.
5. The rate of storage charges.
6. A description of the goods or packages stored.
7. The signature of the warehouseman or his agent.

8. If the receipt is issued for goods of which the warehouseman is owner, either solely or jointly or in common with others, the fact of such ownership.
9. If negotiable, a statement of advances made and liabilities for which the warehouseman claims a lien.

These statutes provide that other provisions may be contained in a warehouse receipt, but that such provisions may not be in violation of any laws of the state and may not release the warehouseman from the exercise of reasonable care. In




Form 8

addition to the direct requirements of the Illinois statute, the elevators of Chicago were by order of the Railroad and Warehouse Commission, issued September 7, 1911, required to print or stamp upon their receipts the words: "This receipt should be reported and registered with the Registrar of the Illinois Grain Department of the Railroad and Warehouse Commission within 24 hours after its issue."

A typical St. Louis negotiable warehouse receipt, showing state registration and cancelation, is reproduced in Form No. 8.

**Regulation by Grain Exchanges.**—The terminal elevators of the primary markets are regulated not only by the states, but also by the grain exchanges under whose auspices most of the grain trading at these markets is conducted. While elevator rules of the exchanges differ, those of the Chicago Board

of Trade may be regarded as typical. The exchange rules applicable in Chicago divide public elevators into two classes: (1) regular elevators, the grain of which is deliverable upon Chicago Board of Trade contracts, and (2) elevators not regular, the grain of which is not so deliverable. In order that elevators may be declared regular they must conform to the following code of rules:

1. Their proprietors or managers must be of unquestioned financial standing and credit.

2. Regular elevators must be so situated that they may be conveniently approached by vessels of ordinary draft and must be connected with one or more eastern railroads.

3. They must be provided with modern receiving, handling and shipping appliances.

4. They must coöperate with the warehouse receipt registration system provided by law.

5. They must promptly report damage to grain in store.

6. In case of change of condition or evasion of Board requirements, they may at any time be removed from the list of regular elevators.

7. Certain special rules are provided for elevators storing flaxseed.

8. Regular elevators must permit duly authorized exchange committees to examine their books and records in order to ascertain the stock of grain and flaxseed in store.

9. Their warehouse receipts must not voluntarily be made regular for delivery upon other exchanges.

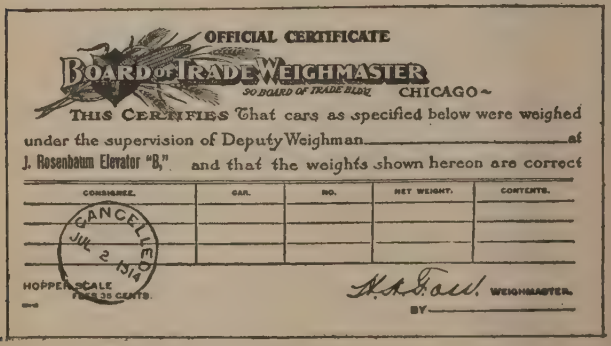
10. All grain received in or shipped out of them must be weighed by the official Board of Trade weighmaster.

The Board of Trade may in case of emergency declare any elevators, vessels, or other places in Chicago suitable for storage to be temporarily regular. It has also fixed the maximum storage charges of regular elevators; it regulates the life of the warehouse receipts accepted for regular deliveries; it publishes the incomes of all regular elevators; and it posts any irregularities which may arise.

The Board operates a "Grade Sampling and Seed Inspection Department," which in coöperation with the state grain

inspectors, as far as practicable, obtains samples of all graded grain stored in elevators or arriving in cars. It maintains standard grain samples, it takes up with the State Inspection Department any instances of improper grading of grain which it may discover, and it grades flaxseed in accordance with grades and grading regulations adopted by the Board.

The Chicago Board of Trade also maintains a Weighing Department and a Custodian Department, both of which are under a Chief Weighmaster and Custodian. The former department weighs the grain shipped into and out of the ele-



OFFICIAL CERTIFICATE

BOARD OF TRADE WEIGHMASTER

90 BOARD OF TRADE BLDG CHICAGO

THIS CERTIFIES That cars as specified below were weighed under the supervision of Deputy Weighman _____ at J. Rosenbaum Elevator "B," and that the weights shown hereon are correct

| CONSIGNEE. | CAR. | NO. | NET WEIGHT. | CONTENTS. |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

CANCELLED JUL 2 1914

HOPPER SCALE FEES 35 CENTS.

H. A. Fow WEIGHMASTER.

BY _____

FORM 9

vators and issues weight certificates. The custodian service which has been extended to nearly all important elevators keeps a record of Board of Trade weights, issues certificates showing the weight of grain unloaded from cars into elevators, prevents the "loading out" of grain until the elevator manager surrenders the properly indorsed certificates for cancelation, and cancels certificates to cover the amount of shrinkage incidental to the handling, cleaning and clipping of grain and any variations between the weight of grain at the time it is unloaded and when it is shipped out of the elevators. Copies of the weight and custodian certificates issued under the jurisdiction of the Chicago Board of Trade are reproduced in Forms 9 and 10.

The extent to which terminal elevators are regulated by the grain exchanges depends somewhat upon the amount of control exercised by the states. When the states perform the weighing, inspection, and grading of grain, and the registration of warehouse receipts, and when they extensively regulate the form of warehouse receipts, the keeping of records, the filing of reports, and the liabilities, duties, and facilities of elevators, the elevator rules of the exchanges are less comprehensive than in states where there is little public control.

It is for this reason that the exchanges at the seaboard markets regulate the grain elevators in greater detail than do

OFFICIAL CERTIFICATE
OF THE
**Custodian Department of the Board of Trade**
OF THE CITY OF CHICAGO

NUMBER Q 34587

Chicago, Illinois, _____ 191__

*I Hereby Certify,* That this day at Central Elevator A the contents of the car specified below was unloaded under the supervision of this Department which will not be loaded out except upon surrender of this receipt for cancellation as provided in the rules and regulations of the Board of Trade of the City of Chicago, governing the Custodian Department.

| CAR | NUMBER | WEIGHT | CONTENTS |
|---|---|---|---|
| | | | |

CANCELLED JUL 2 1914

H. A. FOSS, CUSTODIAN

BY _____

FORM 10

the exchanges at the primary markets of the interior. The New York Produce Exchange, for example, provides inspectors to perform the inspection and grading of grain, weighmasters to do the weighing, and a registrar to keep account of the issue and cancelation of the receipts issued by regular elevators and of all grain received and delivered at such elevators. The exchange establishes the grades and grading rules of the port; it regulates the mixing of grain; it provides for daily elevator reports, for the examination of stored grain by its owners or by inspectors, and for immediate notice of grain in poor condition.

The form of warehouse receipts, which in many of the pri-

mary markets is established by state laws, is in New York determined by the Exchange. Instead of one general warehouse receipt for grain stored in bulk and the identity of which is lost, various forms are issued in New York. The regular New York receipt for graded grain stored in individual elevators is shown in Form No. 11, and is similar to receipts required in the western grain states. A different receipt is issued when graded grain is delivered into a "system" of two or more elevators operated by one warehouse concern. Such a receipt, a reproduction of which is shown in Form No. 12, does not specify the particular elevator in which the grain is stored. A third kind of warehouse receipt is issued for grain stored in the transfer elevators owned by some of the railroads centering at New York. This receipt, a copy of which is reproduced in Form No. 13, permits delivery afloat at elevators' option and is issued in accordance with an agreement between the New York Produce Exchange and the railroads.

**Federal Regulation.**—Elevators used in connection with the interstate transportation of grain are subject to control by the Interstate Commerce Commission. In practice the Commission has confined itself mainly to the prevention of undue discrimination in so-called elevator allowances, which the railroads sometimes pay to elevator concerns at transfer points for the transshipment of grain. The allowances may be in the form of so much per bushel or one hundred pounds of grain handled, of a lease of railroad elevators to the concerns free of charge or at favorable terms, or in some other form. The United States Supreme Court has upheld the payment of reasonable allowances for services rendered, but the Interstate Commerce Commission has the power to prevent undue discrimination in the payment of any allowances for elevation, transfer, mixing, cleaning, clipping, drying, weighing, storage, "loading out," or other interstate elevator service.[1]

**Sources of Elevator Profits.**—The income of the terminal elevator concerns is derived from different sources. As public

[1] *See* 222 U. S. 42. For I. C. C. decisions *see* 12 I. C. C. Rep. 112, 15 I. C. C. Rep. 326, 17 I. C. C. Rep. 192, and 18 I. C. C. Rep. 664.

## REGULAR WAREHOUSE RECEIPT FOR GRADED GRAIN

*Regular Warehouse Receipt for Graded Grain*

No.....

This Grain is subject to our advertised rates of storage

Kind of Grain.....

Bushels.....

Grade.....

....., Date ....., 19.....

Received in..... Stores.....

From.....

.....Bushels

of.....subject

only to the order hereon of.....

and the surrender of this receipt, and payment of charges.

It is hereby agreed by the holders of this receipt that the Grain herein mentioned may be stored with other Grain of the same quality by inspection, in accordance with the Rules and Regulations of the New York Produce Exchange. Loss **by Fire or heating at owner's risk.**

.....

FORM 11

COUNTERSIGNED

.....

.....

*Regular Warehouse System Receipt for Graded Grain*

.....*Warehouse Company*

.

Kind of Grain.....;

No..... New York, .....; 19....  Bushels.....;

Grade.....

Received in the Grain Store System of this Company

From.....

.....Bushels

.....

of.....subject

only to the order hereon of.....

and the surrender of this receipt and payment of charges.

It is AGREED by the holder of this receipt that the grain herein mentioned may be stored, and shall be considered to be and treated as if it were actually stored, with all other grain in said System of the same grade by inspection, in accordance with the rules of the New York Produce Exchange, and that delivery under this receipt may be made of grain of the same grade out of any of the warehouses in said System. In case of loss or damage by fire in any part of said System, so much of said grain as shall bear a like proportion to this receipt as the lost or damaged grain of the same grade shall bear to all grain of like grade in this System of warehouses at the date of any such fire, shall be adjudged lost or damaged; and the obligation to deliver it under this receipt, except, as salvage, canceled; loss by fire or heating at owner's risk.

It is also AGREED that this grain is subject to the payment of our advertised rates of storage, and that accrued storage must be paid April 30th and October 31st in each year, and if not so paid, an extra charge of ¼ cent per bushel shall be made.

.....

FORM 12

No.....

RAILROAD CERTIFICATE FOR GRADED GRAIN, QUANTITY GUARANTEED

NEW YORK GRADE

OFFICE OF THE

.....*Railroad Company*

New York, ..... 19.....

THESE PRESENTS CERTIFY THAT

The.....Railroad Company has received at..... and will deliver the below-mentioned grade and quantity of Grain in accordance with the rules of the New York Produce Exchange and of the Railroad Companies, as the same have been agreed to by the said company.....
(insert quantity and grade)

for account of.....aid deliverable to..... or order, on payment of charges accrued subsequent to the date hereof.

.....*Bushels*
.....

.....

FORM 13

warehousemen they are paid storage charges, the maximum of which is limited by the states or by the grain exchanges. At Chicago, for example, the maximum charges are 1 cent per bushel for the first ten days and $\frac{1}{30}$ of a cent per day thereafter. Grain stored in public elevators at some markets may also be placed into separate bins upon request of the grain owner, in order that it may be cleaned, mixed, dried or otherwise improved, and the warehousemen are entitled to pay for such services. The income from this latter source is small, however, because grain owners seldom avail themselves of this privilege. The profits of the warehousemen, who deal in grain, are mainly derived from the sale, storage and handling of grain which is owned by them. As grain dealers they obtain a profit by purchasing grain at one price and selling it at a higher price. They also mix grain in their private elevators or in private bins, so as to raise the grade of a part of the poor grades of grain purchased from the farmers or country dealers. Grain stored in elevators is subject to at least two inspections—an "in-inspection" at the time it is loaded into the elevators, and an "out-inspection" at the time it is "loaded out"—and this practice enables the grain dealers to make a profit by mixing the grain in the elevators.

The mixing of grain under conditions of fair inspection and grading is not wholly objectionable, for it benefits farmers and dealers alike by providing a market for the lower or "off grades" of grain. The cleaning and drying processes, moreover, may at times result in a real improvement of the mixed grain. It is objectionable, however, when under conditions of careless or unfair inspection and grading, exorbitant profits result. It is objectionable, also, when the low grades of wheat are unfairly scoured so that "the evidence of some of its imperfections, such as sprouts, mold and must, are removed or disguised and unsound wheat is made to appear better than it really is. The miller prefers to have the grain come to him in its natural state, so that he can more readily see the character of the wheat that he is buying."[1] The evils

[1] "Wheat and Flour Prices from Farmer to Consumer," Bureau of Labor Statistics, p. 32.

of unfair mixing are gradually diminishing as the state inspection and grading at the primary markets is being improved.

Profits may also result from undue "dockage" in weight to cover impurities in the grain purchased from farmer or country dealer. Not only may the screenings resulting from cleaning in the terminal elevators be sold, but in the past there have been instances in which the weight of grain shipped out of a primary market was greater than that of the grain received. In the course of a decade, the grain shipments out of one of the western primary markets exceeded the receipts by over twenty-six million bushels. The evils of undue dockage have now been mainly prevented, for dockage at present is more strictly controlled by the state grain inspectors or the grain exchanges.

There are many banks which readily accept terminal elevator receipts accompanied by insurance policies or certificates as collateral for loans. The elevator concerns may, therefore, by storing grain which they own in their terminal elevators, obtain funds with which to purchase more grain and in that way increase their profits as grain dealers. To protect these profits against loss resulting from destruction by fire they insure the grain. To protect them against loss resulting from fluctuation in prices they "hedge" in the speculative market by selling future contracts to cover grain which they have on hand, and buying future contracts to cover grain which they have contracted to deliver but which they have not as yet purchased.[1]

## The Purchase and Sale of Grain at the Primary Markets

Though some of the grain shipped to the primary markets is disposed of by private sale, the grain trade in these markets is largely conducted in accordance with the trading rules of the grain exchange. The grain consigned to the primary mar-

[1] For discussion of hedging, *see* chap. vii.

kets for sale may be sold a number of times before it finally reaches the consumer. It is sold by the country elevator companies to the central elevator concerns and other grain jobbers or dealers, to exporters, or to consumers. All of the grain, except that sold by the country elevators to consumers, is again sold by the central elevator concerns, exporters and other grain dealers. Thereafter it may be repeatedly sold, for there are grain dealers and speculators who buy and sell whenever the market warrants, or seems to warrant a profit. The negotiable warehouse receipts of the terminal elevators, which represent actual grain or the delivery notices which specify warehouse receipts when properly indorsed may change hands many times before the grain is shipped out of the elevators.

**The Purchase of Grain from Country Elevators.**—The grain shipped to the primary markets by line elevator companies is mainly sold on the floor of the grain exchange by their own representatives. That shipped by independent, local dealers, by farmers' coöperative elevator companies, individual farmers or other local shippers is usually sold through central commissionmen who also do most of their selling on the exchange. The commissionman receives a commission of so much per bushel, in the case of wheat, rye or barley 1 cent, and of corn or oats $\frac{1}{2}$ cent, as determined by the grain exchange. His chief services are the selling of the grain consigned to him and the safeguarding of his customers in all matters incident thereto, such as inspection and grading, dockage, weighing, freight charges, switching, storage and insurance. He also is a means of supplying country elevators with credit, for he commonly permits them to draw against him for as much as 90 per cent. of the value of the grain consigned to him. The country dealers do this by attaching to the railroad bills of lading, drafts drawn on the commissionman, and depositing them in country banks. Sometimes, the commissionman also advances funds to country elevator concerns upon an open account, without requiring the deposit of collateral. Having sold and delivered the grain consigned to him, the commissionman renders an Account of Sales to the

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Account Sales by COMMISSION DEPARTMENT,

For Account of.....

| Car | Initials | Contents | | Date of Sale | Gross Weight | Dockage | Net Bushels | Price | Amount |
|---|---|---|---|---|---|---|---|---|---|
| | | Grade | Dockage | | | | | | |
| | | | | | | | | | |
| | | Freight, Inspection and Weighing, | | | | | | | |
| | | Switching | Trackage | | | | | | |
| | | Reinspection | | | | | | | |
| | | Storage | | | | | | | |
| | | Insurance | | | | | | | |
| | | Commission | | | | | TOTAL CHARGES | | |
| | | Days' Interest at per cent. | | | | | | | |
| | | Net Proceeds Advanced | | | | | | | |
| | | " | | | | | | | |
| | E. & O. E. | Balance | | | | | | | |

FORM 14

country shipper, Form No. 14, indicating a typical account rendered for grain sold "on track."

The grain shipped by the country elevators is sold by using any one of three kinds of grain contracts. (1) It may be sold on a "to arrive" contract, i. e., in accordance with the rules of the exchange it may be sold before it has actually arrived at the primary market. The country shipper obligates himself to ship sufficient grain within fifteen days to fill the contract which was previously made. (2) It may be disposed of by an "on track" sale, upon its arrival in the primary market. In this case the grain is sold in carlots after it reaches the primary market, the cars being then switched to the terminal elevators or to other points within the switching limits of the market. (3) The country elevator concern may choose to store its grain in the public elevators of the primary market, with a view to obtaining a better price than rules at the time of its arrival. When the owner of the grain directs, it is sold "in store," delivery being made by indorsing to the purchaser the negotiable warehouse receipt which was issued when the grain was placed in the elevator.

The grain arriving at the primary markets from the country elevators is mainly sold to the terminal elevator companies, many of whom are grain dealers. It is also sold to millers, especially in markets where the milling industry is important, to malsters and cereal food manufacturers, to central grain dealers who are not warehousemen, to exporters, and in case of flaxseed, to linseed oil manufacturers.

**The Sale of Grain Stored in Terminal Elevators.**—The grain which is stored in the public elevators of the primary market becomes the basis of a continuous grain trade, conducted under the rules of the grain exchange. While the stored grain does not leave the elevator every time the warehouse receipt passes from one dealer to another, it is at some time sold to millers or other consumers, to seaboard grain dealers, or exporting companies located either at primary or seaboard markets. Terminal elevator concerns may also become exporters of grain, in which case they offer the grain for sale on foreign exchanges, or fill orders received from abroad.

The methods of selling the grain which has left the hands of the country shippers and is stored in the terminal elevators at the primary markets are various. (1) It may be sold through brokers on the exchanges in the primary markets, upon payment of prescribed brokerage commission charges. Such sales may be made for immediate or future delivery, and they may be made by sample, by grade, or by sample and grade combined.

(2) The grain stored in elevators in the primary markets may be sold on the seaboard exchanges. The terminal elevator companies have certain brokers representing them in the seaboard markets, the brokers being supplied with samples of the standard grade of wheat, corn and other grains which they are instructed to sell. The brokers in this way sell some of the grain placed at their disposal to millers who are represented on the port exchanges, but more of it to eastern distributing and exporting grain dealers. The dealers who distribute grain throughout the East and who obtain most of their supply in this way, sell the grain mainly to millers and to local grain and feed concerns by means of salesmen and mailing cards. They usually sell the grain in transit and then reconsign the cars to the buyers from the railroad reconsignment points to which the carloads of grain had originally been shipped.

The eastern grain exporters, who also obtain most of their supply from the terminal elevators of the primary markets, fill foreign orders or sell their grain through brokers on the exchanges of the leading British and Continental European grain markets. Having received notice of acceptance, they contract for ocean freight with steamship lines or chartered ocean carriers, and at the time of shipment they contract for marine insurance to protect the grain which they are exporting.

(3) Grain which is exported directly from the primary markets by the terminal elevator concerns or by exporting companies is sold through brokers on the European exchanges in the same way that the grain exported by eastern dealers is sold. A primary market exporter may arrange on a com-

mission basis to have a seaboard exporter insure and store grain awaiting shipment, contract for ocean freight marine insurance and otherwise see that the grain is prop forwarded.[1] There are also regular forwarding agents at ocean ports who, upon payment of a commission, will see his grain is forwarded to destination, or he may hav salaried representative at the port through which he ordina exports.

(4) Some grain is also sold privately in the central m kets.

## Factors Influencing Grain Prices

Since the great volume of the available grain of the Un States is concentrated at the primary markets of the inter the prices paid at those markets determine the prices paid the thousands of country grain markets, at the seaboard m kets, or at any of the interior markets to which the grai shipped for final consumption.

The *prices paid to the farmers* at the local markets do in every instance follow the primary market with minute cision. They do not fluctuate as frequently during the co of a day as do the primary market prices; neither are price margins which the local buyers allow themselves ev where identical. The country prices follow the primary m ket prices more closely, and the difference between them narrower at local markets where several buyers compete t at non-competitive points. Usually, however, the cou price is lower than the primary market price by the amo of the freight charges from the local to primary market, a price margin of a given number of cents per bushel, wh the country buyer deducts to cover elevator expenses and y a profit.[2]

The direct influence of the growers ordinarily affects price which they receive at particular local markets only

[1] S. Harris: "Methods of Marketing the Grain Crop," *The nals of the American Academy of Political and Social Science*, S 1911, p. 57.

[2] For price margins *see* chap. iii, pp. 39, 40, 41.

so far as they may depress the price margin which the local buyers deduct from the primary market price, by withholding their grain or by organizing a coöperative elevator. If a great number of growers systematically withheld their grain at many local markets, their action would affect the price level at the primary markets, but thus far most of the growers have not stored the bulk of their grain longer than three months after the harvesting season, and their coöperative companies have never been able to dictate primary market prices. The growers, however, exert an indirect influence upon the price paid at the primary markets, in that the cost of producing grain, the cost of hauling it to the country elevator, and their profits affect the supply of grain which in the long run is produced. Unless the primary market price is such as to permit the payment of a country price sufficiently high to yield a reasonable profit, the farmers will produce less grain, and the resulting decline in the supply will inevitably force up the entire level of grain prices.

The *prices paid at the seaboard* and interior markets to which grain is shipped from the primary markets are also based principally upon the primary market prices. As the country prices are lower, so the seaboard prices are higher than the prices paid at the primary markets by the amount of the freight rates[1] to tidewater plus certain additional sums per bushel to cover handling expenses and the eastern grain dealer's trade profit. Thus when No. 2 red winter wheat, during March, 1914, sold at from 92⅛ to 96⅜ cents per bushel in store at Chicago it sold at from 105 to 106 per bushel f. o. b. afloat at New York. The tidewater prices do not fluctuate with the primary market prices with exact precision, for seaboard markets also have elevators which may be filled with grain, and exchanges where prices may be temporarily manipulated. The seaboard markets being more closely dependent upon the export trade, moreover, are influenced by the prices paid on the leading European exchanges to a greater extent than are the primary markets of the interior.

*Primary market prices* are determined largely by condi-

[1] For freight rates, *see* p. 59.

tions of supply and demand. When the supply of grain is relatively large the price level is low, and when the reverse condition prevails the price level is high. The price determining supply is not the supply available at any particular primary market, not that available at all the primary markets, nor even that of the whole United States, for the grain market is a world's market and the prices paid at the primary markets are influenced to some extent by the grain crops of the world. The term supply, moreover, includes different conceptions, all of which influence the price level. The actual supply is, of course, that portion of the crop which leaves the farmer and enters the grain trade. But prices are influenced during and after the harvesting seasons by the total production of grain; after the harvesting seasons by the visible supply—the amount of grain in elevators, warehouses, railroad cars, vessels and other places where it is available for trading purposes; during the planting season by the acreage planted; and during the growing season by the reported condition of the crops. Conditions of frost, drought, floods, rainfall, grain pests, the opening of new farming regions, the use of fertilizers, land values, the rotation of crops and the relative use of land for different varieties of grain, for livestock, dairy farming or other purposes, and, until the enactment of the tariff act of October, 1913, the import duties on grain and flour, were considerations of supply.

The place where the various conditions of supply are considered is on the great grain exchanges. Indeed, it may be said that grain prices are determined at the primary markets only partly in accordance with the actual supply of grain existing at any particular time. They are determined largely in accordance with the judgment of the hundreds of buyers and sellers of grain trading on the grain exchanges, as to how large the yield of the coming crop will be. There is practically always an element of the future in the determination of grain prices.

It is also on the exchanges of the primary markets that the *demand* for grain takes concrete form. The price-determining demand is, likewise, one that is nation-wide and

world-wide, and it is affected by many considerations such as the condition of the money market, the state of business prosperity, the growth of population, the shift of population from country to city, the import tariffs of foreign countries, conditions of war or peace, and the degree of competition or combination existing within and between the primary markets.

There are other considerations besides supply and demand which influence primary market prices. The relative prices at the different markets are influenced to some extent by the cost of transporting the grain to the seaboard and to other interior and foreign markets. It is partly because of differences in the freight rates to the seaboard that when on July 3, 1914, No. 2 red winter wheat sold at 81¼ to 82 cents per bushel in Chicago, the price in St. Louis was 77½ to 78¼ cents and in Kansas City 74½. Prices are influenced also by conditions of quality, for they are regularly quoted in terms of varieties and grades. The marketing and carrying costs also influence the prices paid at the primary markets, i. e., the charges for storage, weighing, grading, inspection, etc. While individual dealers cannot obtain higher prices than their competitors because their marketing and carrying costs are higher, the prices paid in particular primary markets and in all the primary markets combined must be sufficient to cover costs and yield a profit. Grain prices are also influenced by forces such as the volume of gold production, the extensive use of credit instruments, the conditions of the money market, and the state of business prosperity. These are forces which influence prices generally and are not peculiar to grain,[1] except that the last-mentioned factor influences grain prices less than the prices of cotton, crude minerals and other industrial materials, or of most manufactured commodities.

Grain prices are at times subject to manipulation on the exchanges, but so large is the volume of grain annually bought and sold, and so extensive is the competition between the primary markets, that the effects of any artificial manipulation which is not in accord with fundamental conditions of supply and demand can only be temporary. In one sense all grain

[1] *See* chap. xvii.

prices are the products of manipulation because they are constantly being adjusted to the level which in the judgment of the grain trade is warranted by the future crop. Manipulation, in the narrower sense, however, has but temporary effects on the price of grain. The relation between speculation and grain prices is fully discussed in Chapter VII.

All of the various price factors are, in their present and future aspects, considered on the grain exchanges. The combined judgment of the multitude of buyers and sellers who transact business on the exchanges determines the price of grain paid in the primary markets.

The inspection and grading of grain, the relations between the speculative exchanges and the sale of grain, and the financing of grain crops and movements, since they are subjects which are not confined to the grain trade, are discussed in subsequent chapters.

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*See also* Bibliography on Grain Exchanges, pp. 162, 163.

* References designated by * apply also to chap. iii.

## CHAPTER V

### THE LOCAL COTTON MARKET

The local cotton trade affords a second example of how a farm product produced over wide areas by thousands of growers is sold by the producers and begins its journey to its consumers. The cotton crop of the United States is produced by about 1,700,000 growers, ginned by 25,000 ginneries, stored at 2,600 public storage places, consumed by 2,100 consuming establishments, and is handled by many transportation concerns, local buyers, merchants, factors, exporting houses and brokers.[1] The methods of purchasing the cotton crop from the growers, owing to differences in the nature of the commodity, the weaker financial condition of many of the growers, the greater importance of the foreign market, the location of many cotton mills in some of the growing districts, and to trade custom, differ somewhat from those described in connection with the grain trade.

#### The Cotton-growing Belt

While the area of the cotton-growing region is smaller than that of various grain-producing districts, it has been gradually extended westward from the Carolina seaboards to western Texas and Oklahoma. It includes the region south of an irregular line drawn from southeastern Virginia through the western part of North Carolina, the southern part of Tennessee and Missouri, the northern part of Oklahoma and the southeastern part of New Mexico, a distance of 1,500 miles in length and 500 miles in width (*See* Map No. VI). Small quantities of cotton have also in recent years been grown on

[1] U. S. Census: Cotton Production 1913, Bulletin No. 125, p. 64.

the irrigated lands of Arizona and California. The total cotton acreage of the United States has in the past few years ranged from 34,250,000 to nearly 37,500,000[1] acres.

The total cotton crop as reported by the United States Census Office has in recent years ranged from a minimum of 10,462,000 running bales in the season 1909-1910 to a maximum of 16,109,000 in the season 1911-1912.[2] In the latest crop season (1913-1914) for which details are now available, Texas produced over 28 per cent. of the total crop of the United States, Georgia 16 per cent., and the other important cotton-producing states in the relative order of their crops were Alabama, South Carolina, Mississippi, Arkansas, Oklahoma, North Carolina, Louisiana and Tennessee. The total crop of the season, including linters, aggregated 14,614,000 running bales.[3]

**Commercial and Geographical Classification.**—The cotton belt and crop may be variously classified from the standpoint of geographical location and varieties of cotton produced. In the broadest sense the United States produces two general varieties of cotton: (1) sea-island cotton, the growth of which is confined to limited areas near the coast of South Carolina, Georgia, and Florida and to adjacent islands, and (2) upland cotton, which is grown throughout the remainder of the cotton belt. The former yields a fine, strong, silky staple or fiber from 1¼ to 2¾ inches[4] in length. Having a fiber exceeding 1½ inches average length, it is distinctly America's long staple cotton, and is used for the making of the finest grades of yarn, cloth and lace, for mercerizing, for mixing with silk, and for other purposes requiring a fine variety of cotton. Since the average crop of sea-island cotton is the equivalent of but 75,000 bales of 500 pounds each, 25,000 bales of which are ordinarily exported, American cotton mills have been obliged to use certain varieties of long-staple upland cotton for the

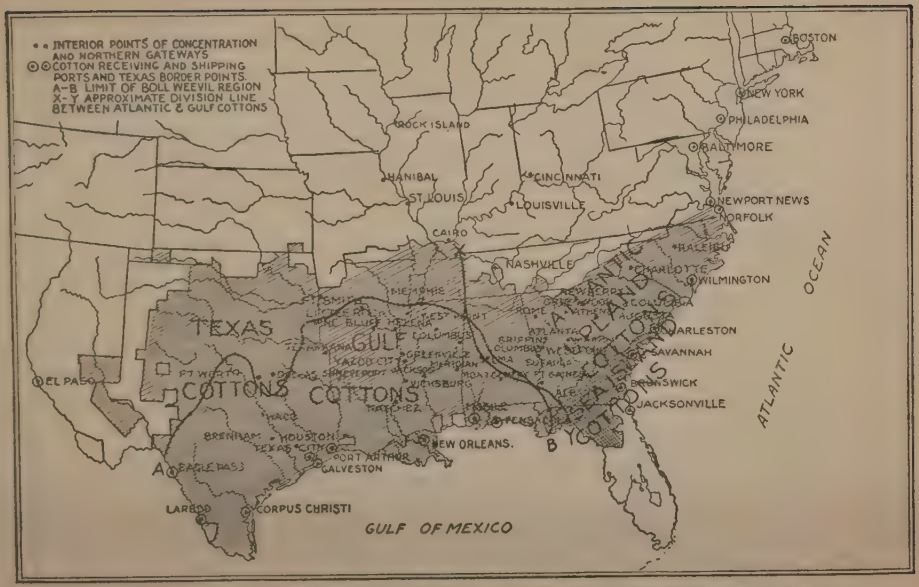
[1] U. S. Bureau of Statistics (Dept. of Agriculture): *The Agricultural Outlook*, May 22, 1914, p. 13.

[2] Round bales counted as half-bales, U. S. Census Bulletin No. 116 (1912), p. 24.

[3] U. S. Census Bulletin No. 125, p. 9.

[4] U. S. Tariff Board, Cotton Manufactures vol. i, p. 26.

MAP VI.—THE COTTON BELT 1913–14.[1]




[1] Cotton area as per U. S. Census Bul. 125. Line X–Y as per U. S. Bureau of Plant Industry, Farmer's Bul. 591.

same purposes, and also to import long-staple cotton from Egypt. Upland cotton comprises over 99 per cent. of the entire cotton crop of the United States. Its staple is on the whole somewhat coarser and its length varies from $\frac{5}{8}$ to $1\frac{1}{2}$ inches.

Botanically there are a great many varieties of upland cotton, varying in productiveness, time of maturity, size of boll, length, strength, fineness and color of staple, ability to resist wind and rainstorms, appearance of the plant, and in other respects. The United States Department of Agriculture has classed the different varieties of upland cotton into eight groups or divisions—big-boll, long-staple cluster, semicluster, early or short limb, Peterkin or Rio Grande, and intermediate types—and under each group there are many varieties.[1]

Commercially, all varieties of American upland cotton are bought and sold, on the great speculative exchanges, as "upland" cotton. In the spot markets of the South, however, and among cotton merchants and spinners, upland cotton is variously subdivided into additional classes or types:

(1) Thus in the narrower sense "Atlantic upland" cotton is produced in the eastern cotton states,—North and South Carolina, Georgia, Florida, Virginia, and parts of Alabama and Tennessee. It is the "short staple" cotton of the United States, its floss varying from $\frac{7}{8}$ to 1 inch in length. (2) "Gulf" or "Western" cotton is grown in the basin of the Mississippi River and in the Gulf cotton states. (3) "Texas" cotton is produced in Texas and Oklahoma. Both Gulf and Texas cottons, which are frequently grown in the same regions, have a staple of from 1 to $1\frac{3}{16}$—usually $1\frac{1}{16}$ inches—in length. (4) Certain medium long-staple cottons most of which are known as "benders," "rivers," "peelers," "creeks," or "quarter" cottons are grown in the bends of, or near the, Mississippi, Arkansas, White and Red rivers in Mississippi, Louisiana and Arkansas, mainly on a strip of land about 75 miles wide and 200 miles long locally known as the Mississippi Deltas. The length of the staple of these cottons varies from

[1] *See* "Varieties of American Upland Cotton," Bureau of Plant Industry, Bulletin No. 163.

$1\frac{1}{16}$ to $1\frac{1}{2}$ inches and averages about $1\frac{1}{4}$ inches.[1] Small quantities of long-staple upland cotton are also produced in various counties of Tennessee, Texas, Georgia and the Carolinas. It is estimated that in 1914 the total crop of long-staple cotton, other than sea-island, somewhat exceeded 400,000 bales of $1\frac{3}{16}$ inch cotton or 1,000,000 bales of $1\frac{1}{8}$ inch cotton.[2] There are no sharply defined geographical limits within which the various types of upland cotton are grown. It is for this reason that the various cotton regions are not sharply defined in the accompanying map (No. VI). Ordinarily about 50 per cent. of the upland cotton consists of "Atlantic upland," 45 per cent. "Gulf" and "Texas," and 5 per cent. of long-staple varieties or types.[3]

In addition to sea-island and the various types of upland cotton, from three to six hundred thousand bales of so-called "linters" are annually marketed. Linters is the short fiber obtained by reginning cottonseed before the oil is extracted in the cottonseed oil mills. It is used in upholstering, in manufacturing mattresses, comforts, batting, felts, cushions, wadding, pads, absorbent cotton, guncotton, niter powder and writing paper, and when mixed with shoddy it is used in making low-grade yarns, wrapping twine, rope, and lamp- and candle-wicks.[4]

**World's Production of Cotton.**—The cotton belt of the United States produces over 60 per cent. of the world's cotton crop available for mill consumption. The cotton grown in India and China, two of the heaviest foreign producing countries, consists mostly of coarse short-staple varieties. That of

[1] U. S. Census Bulletin No. 116, p. 18; U. S. Bureau of Plant Industry, Bulletin No. 163, p. 33; A. R. Marsh: "Cotton Exchanges and Their Economic Functions," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 265; U. S. Bureau of Plant Industry: Farmers' Bulletin No. 591, p. 16.

[2] U. S. Bureau of Crop Estimates: *The Agricultural Outlook*, Feb. 6, 1915, Farmers' Bulletin No. 651, p. 13.

[3] A. R. Marsh: "Cotton Exchanges and Their Economic Functions," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 265.

[4] "Supply and Distribution of Cotton" (1913), U. S. Census Bulletin No. 117, p. 14.

Egypt is of excellent quality, but scarcely begins to satisfy the demand of the world's cotton mills for high-grade long-staple cotton. The remainder of the world's crop available for mill consumption is widely scattered from Russia, Turkey and Persia, to Mexico, South American countries, the West Indies and colonial Africa. The close dependence of British and European cotton mills upon the American crop has caused various British, German, French, Belgian, Dutch, Portuguese, Spanish and Italian associations and organizations to promote the culture of cotton in the colonies of their respective countries and elsewhere. The annual crop of colonial cotton has, indeed, grown from 63,473 bales in 1905 to 102,890 in 1912.[1] The relative importance of the American cotton crop, however, may not be measured solely by its volume; the poor quality of the cotton grown in some of the principal foreign cotton-producing countries still obliges the manufacturers of the finer

TABLE VI

WORLD'S PRODUCTION OF COTTON FOR MILL CONSUMPTION*
(*In bales of 500 pounds net weight*)

| Country | 1905–6 | 1910–11 | 1911–12 | 1913–14 | Per Cent. of Total 1913–14 |
|---|---|---|---|---|---|
| United States | 10,340,000 | 11,104,000 | 15,013,000 | 13,545,000 | 60.9 |
| India | 2,519,000 | 2,722,000 | 2,270,000 | 3,801,000 | 17.1 |
| Egypt | 1,181,000 | 1,506,000 | 1,463,000 | 1,470,000 | 6.6 |
| China | 415,000 | 775,000 | 625,000 | 1,200,000 | 5.4 |
| Russia | 585,000 | 981,000 | 939,000 | 1,004,000 | 4.5 |
| Brazil | 258,000 | 280,000 | 275,000 | 420,000 | 1.9 |
| Mexico | 125,000 | 147,000 | 130,000 | 150,000 | .6 |
| Peru | 55,000 | 95,000 | 100,000 | 110,000 | .5 |
| Persia | 47,000 | 117,000 | 120,000 | 140,000 | .6 |
| Turkey | 107,000 | 105,000 | 124,000 | 130,000 | .6 |
| Others | 100,000 | 195,000 | 210,000 | 285,000 | 1.3 |
| Total | 15,732,000 | 18,027,000 | 21,269,000 | 22,255,000 | 100.00 |

* U. S. Census Bulletin, No. 125, p. 57.

[1] Bureau of Statistics (Department of Agriculture): *The Agricultural Outlook*, Mar. 18, 1914, p. 42.

grades of yarn and cloth in Europe to import the bulk of their supply from the American cotton belt.

## The Local Handling and Shipment of Cotton by Growers

**Ginning and Baling.**—Ordinarily the first step in the marketing of cotton is to haul it from the farms to the gin. Growers who have obtained advances from local merchants or other persons, with the growing cotton as security, are sometimes required to haul the picked cotton, before it is ginned, to the scales of these merchants to have it weighed, and obtain credit at the market value. In any event, however, the "seed-cotton"—cotton with lint attached to seeds—is taken to some one of the 25,000 ginneries to have the seeds removed and the lint baled. Usually about two-thirds of the weight of seed-cotton comprises seed and one-third lint. Eli Whitney, by the invention of the cotton gin and subsequent inventors by its improvement, made possible the development of the cotton industry to its present vast proportions, for the gin has completely displaced the old hand method of separating the seed from the lint. Ginning has undergone great changes and improvements since the construction, in 1793, of the first gin suitable for upland cotton. Mechanically, the gin has developed from the hand gin, which daily ginned half a modern bale per man, to the old plantation gin which increased the quantity to several bales, and then to the centralized high-power gin which commonly gins and bales from 50 to 75 bales daily and in some cases as much as 250 bales in a day.[1] Two main types of gin are in use at present: the roller gin and the saw gin. The former, which was in use long before the Whitney saw gin was invented, is used for ginning sea-island cotton, the seeds of which are loose in the lint. The latter is used to gin upland cotton, the seeds of which are removed only with difficulty. It consists of a series of saws attached to revolving cylinders, which draw the lint through the openings or slits of steel plates.

[1] C. W. Burkett and C. H. Poe: Cotton, p. 221.

The management of the gins has also undergone changes. The original hand gins were operated on the farms, and when power gins came into use each large plantation continued to operate its own plant. The cost of purchasing, operating, and repairing power gins which were used but a small part of the season, proved to be too expensive for the smaller farms into which most of the large plantations were broken, and the plantation gins were largely displaced by high-power central ginneries. Most of the growers now take their seed-cotton to large well-equipped stationary ginneries and pay the operators for their ginning and baling services. Some of the large plantations, however, which are owned by individuals, corporations or syndicates are equipped with power gins of their own.

The large ginneries are frequently unable to gin and bale all the cotton immediately after it is received by them. They therefore issue "gin tickets" against the production of which they will eventually deliver the baled cotton. These tickets are frequently accepted by local banks as the basis for the advance of funds to cotton buyers.[1]

The ginneries pack the lint cotton into loose rough bales. The usual "square" gin bale of upland cotton known as the "flat" or "plantation" bale has dimensions of about 54 by 27 by 36 inches and a gross weight of about 500 pounds. Some upland cotton is also baled into "round" bales which are about 3 feet long, 20 inches in diameter, and weigh about 250 pounds. In the season of 1912-1913, round bales of upland cotton which are commonly counted as half-bales, comprised but 81,528 as compared with 13,373,998 square bales. Sea-island cotton is usually packed into bales 80 inches long, having a diameter of 32 inches and weighing about 390 pounds.[2] The average gross weight of square upland cotton bales in the season 1912-13 was 508.7 pounds, round bales 253.9, and sea-island bales 381.9. Broadly speaking the standard Ameri-

[1] J. J. Arnold: "Financing of Cotton," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 283.

[2] U. S. Census Bulletin No. 95, p. 52.

can bale weighs 500 pounds and is generally so regarded in domestic markets. On the settlement of contracts in the foreign trade, however, "the standard for cotton from Texas and Arkansas is usually fixed at 530 pounds per bale, that for all other Gulf cotton, including Alabama and Oklahoma, at 510 pounds, while that from other sections is fixed at 500 pounds." [1]

At a small percentage of the gins, the baled cotton is completely covered with bagging, but usually a space on each side of the bale remains exposed, for before the bale is shipped to its final destination it is recompressed into a smaller, more compact bale. The amount of tare—bagging and iron bands—used at the ginneries varies from 19 to 24 pounds, or from 3.8 to 4.8 per cent. of the gross weight of a 500-pound bale.

**Local Storage and Hauling.**—The seed-cotton is hauled to the gins by the growers in open wagons. After being baled it may be sold at the gin, it may be stored, it may be consigned to a factor for sale at some larger cotton market and shipped to him by rail or water, it may be hauled directly to a nearby cotton mill, it may be taken to a local railroad station or steamboat landing for sale, or it may be taken back to the farm. The bales are often subjected to rough and careless handling. At the railroad stations and markets they are sometimes piled on open platforms or even on the ground, and when taken back to the farms they are sometimes left out in the open, unprotected from rain or farm animals. One source of great waste in the cotton trade is gradually being eliminated by the construction of a greater number of protected storage places. When cotton is stored in recognized warehouses, whether by growers or buyers, warehouse receipts are issued. Such receipts are used by some growers to obtain loans from banks in order to avoid the sale of their cotton at low prices, and by cotton buyers to obtain funds for the financing of their transactions.

At some time or other most of the cotton is hauled to local shipping points. The hauling is done mainly by the growers, although in exceptional instances it is done by hired freighters.

[1] U. S. Bureau of Corporations: Cotton Tare, p. 4.

Cotton being a more valuable commodity than grain, it may be hauled in smaller loads and the hauling cost is of relatively smaller moment. In 1906 the Department of Agriculture stated that for the United States as a whole the average cost of hauling cotton from farms to shipping points was about 80 cents per bale, and the average load a fraction more than three bales.[1] The average cost per hundred pounds in that year ranged from 9 to 23 cents in the various cotton-growing states, and the average distance to shipping points from 7.9 to 15 miles. In 1915 the average load was reported to be three bales and the average distance to market somewhat less than it had been nine years earlier.[2]

## Sale of Cotton by the Grower

Cotton may be sold either after it is ginned or as seed-cotton. The former practice prevails almost universally in the United States, for the sale of "cotton in the seed is a sort of game of chance based on the law of averages." "The practice of selling cotton in the seed is confined almost exclusively to the western end of the cotton belt. The better class of buyers base their calculations of lint percentages in making their offers for cotton on the comparative yield from day to day of lint to seed in their own gin or the one which they patronize. As a result the farmer who grows a better variety yielding a higher percentage of lint gets only the average price, and the one who grows a 'sorry' variety will in most cases receive some of the benefits that belong to his more progressive neighbor." [3]

There are various methods by which the growers sell their cotton crop, for they are affected by the financial condition of the growers, the existence of different kinds of buyers, the number of available storage houses, the amount of coöperation among the growers, the prevailing price, the ease or difficulty

[1] U. S. Bureau of Statistics, Bulletin No. 49, p. 21.
[2] Bureau of Crop Estimates, Farmers' Bulletin No. 672, p. 12.
[3] U. S. Department of Agriculture Year Book (1912), p. 453.

of reaching the large cotton markets or the cotton mills of the South, the prevailing custom, the intelligence of the growers and by other considerations. During the slave days the cotton grown on large plantations was usually consigned directly to the cotton factors or commissionmen located at the large seaports such as Charleston, Savannah, and New Orleans, the grower paying a commission for the sale of his cotton and also handling and shipping costs such as cartage, freight, storage, insurance, weighing, compressing and repairing bagging.

This method continued for a time after the Civil War, but with the break-up of most of the plantations into smaller farms, many of the small landowners and tenants had insufficient marketing knowledge or were unable to assume the responsibility of consigning their cotton to distant factors. The old method, although it did not disappear entirely, was largely displaced by a system of numerous middlemen. The small growers frequently sold their crop to a local merchant at the county seat or other local town, and the cotton then passed successively through the hands of a commissionman at the state capital, a dealer at the seaport and a New York exporting concern.[1]

At the present time the farmers sell their cotton in different ways, and, as will be seen in the following chapter, the local buyers in turn dispose of their purchases variously.

**1. Sale to Local Merchants.**—In parts of the eastern cotton belt—in the states of the South Atlantic seaboard where 58.7 per cent. of the farms in 1910 comprised less than fifty acres and where some of the growers are financially weak—a portion of the cotton crop is still sold to local merchants, bankers or landlords or through them as commissionmen. The system is a remnant of the conditions which followed the break-up of the large plantations. The weak financial condition of some of the small landowners and especially the small tenants, not only obliges or induces them to sell their cotton immediately after it is harvested, but it causes them to pledge the growing crop with local merchants for an advance of

[1] C. W. Burkett and C. H. Poe: Cotton, p. 72.

needed implements, supplies, livestock or funds. The loans are usually obtained from local merchants, but sometimes from local bankers, or in the case of tenants, from landlords. The tenants of large landowning corporations or syndicates sometimes obtain advances from general merchandise stores which are operated by those concerns. In any case, the growers who obtain the advances, which may amount to 30 or 40 per cent. of the estimated value of their cotton crops, must settle with the merchant, banker or landlord when their cotton is sold. They may sell the cotton to the merchants who in many cases are cotton buyers, or they may sell it through them on a commission basis, but they receive merely the balance due after the merchant's loans are repaid.

This method is necessarily an expensive one. The growers are obliged to pay interest on the loans which they obtain, and since the merchants in turn frequently borrow from banks, the interest charges paid by the growers are usually high. If they sell to the local merchants a dealer's profit is deducted from the price which they receive. If they sell through them they are obliged to pay a commission of about $1.00 per bale. If they store the cotton with the merchant they are obliged to pay a storage charge of 50 cents a bale. The system, moreover, induces them to sell their crop as soon as possible, i. e., during the harvesting season when prices are frequently at their lowest level. The method is gradually declining in importance, for the growers are becoming financially stronger, other buyers are appearing at the local markets, and the coöperative farmers' unions are in some instances providing other means for obtaining loans and for storing cotton in warehouses.

**2. Sale to Exporting Houses and Cotton Brokers.** —The practice which prevails the most widely throughout the Gulf states, Texas and Oklahoma, but which is also becoming common in the eastern cotton belt, is the direct sale by the grower to the agents of large exporting houses and other cotton-buying firms or brokers who ship the cotton abroad or to the northern mills. The large exporting houses have their main offices at New York or New Orleans, and

branch offices at some of the principal cotton-trading centers such as Galveston, Memphis, Atlanta, Savannah, and Houston, and if the main office is in New York, they also have a branch office at New Orleans. Growers in the immediate vicinity of these cities sell their crop at these branch offices, but the usual practice is to sell it to local agents who are sent throughout the cotton-growing districts. The large exporting concerns have local representatives at the larger interior towns or interior points of concentration who buy cotton directly from the growers who haul it there. The trading at some of the larger interior markets is done in accordance with the rules of local cotton exchanges. Since much cotton is sold at these points by local merchants and commissionmen as well as directly by farmers, and as they perform various other functions, they will be more fully described in the following chapter. The large exporting houses also send traveling buyers to many local markets to purchase cotton directly from the growers at the gins, the railroad stations, steamboat landings, local warehouses and cotton yards, or at growers' premises. Some of them have more than one hundred local representatives and traveling buyers to purchase from the growers and local dealers all the cotton they are able to obtain at current prices.

The smaller cotton-buying firms or brokers also purchase much cotton directly from the farmers through local buying agents, but they do most of their buying only after they have obtained orders from the spinners or their representatives. Having booked the cotton for future delivery they instruct their buyers to purchase the required quantity at prices sufficiently low to yield a trade profit.

**3. Sale to Southern Mills.**—Since 1903 the mills located in the cotton-growing states have consumed more American cotton than the mills located in the New England and other northern states. During the year ending August 31, 1914, the total cotton consumption of the southern mills, including imported cotton, amounted to 3,023,415 running bales (counting round bales as half-bales) while those of all other states amounted to 2,861,318 bales.[1] The takings of American

[1] As reported by U. S. Census, in Bulletin No. 128, p. 8.

cotton in the southern and northern mills were respectively 3,037,308 and 2,513,622 bales.[1] In parts of North and South Carolina, Georgia and Alabama where most of the southern mills are located and to a smaller extent in Tennessee, Mississippi, Texas and Virginia, some growers sell their cotton directly to the spinners. The southern spinners obtain much of their supply from growers and local merchants who sell directly at the mills, and some of them also send buyers through the districts which grow cotton suited to their particular needs.[2] The sale of cotton by growers to local mills is the most direct method of selling cotton in existence and ordinarily yields to the growers the highest profits. The southern mills, being in competition with buyers who ship cotton abroad or to northern mills, are obliged to pay such prices as market conditions warrant. The sales being direct, all selling costs are in some cases avoided; in others there is a weighing charge of from 10 to 25 cents per bale, but at most the marketing costs do not exceed 50 cents per bale.

**4. Consignment to Cotton Factors.**—Some growers, instead of selling their cotton to local buyers, consign it to commissionmen or factors at the larger interior points of concentration or at the ports. The factors who handle cotton for growers, local merchants and others may sell the consignments immediately, and charge a commission of say one dollar per bale for their services. They may also insure the cotton, place it in storage, and make an advance of from 60 to 75 per cent. of its market value to the owner. At times they make advances to farmers with the growing crop as security. A part of the funds used to make advances is obtained from banks which accept storage receipts as security for loans.[3] Since most of the growers sell their crop at the local markets, the central commissionmen handle less cotton for growers than for merchants and other local buyers.

[1] As reported by the Secretary of New Orleans Cotton Exchange in Annual Report for 1913-1914.

[2] M. T. Copeland: The Cotton Manufacturing Industry of the United States, p. 183.

[3] J. J. Arnold: "Financing of Cotton," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 282.

**5. Sale to Foreign Buyers.**—While the bulk of the cotton shipped abroad is sold and shipped to foreign buyers by American cotton exporters, some Liverpool and Manchester cotton houses send buyers to the United States.[1] These buyers, however, make their purchases mainly at the large interior and port markets, and consequently purchase relatively little cotton directly from the growers.

**6. The Cotton-growers' Unions.**—Some cotton has in recent years been sold at coöperative farmers' warehouses by the farmers themselves or by the warehouse company upon payment of a fee or commission of say 50 cents per bale.[2] Some of the coöperative warehouses classify and grade, sample, weigh, and after grouping it into lots of 50 or more bales, sell cotton for the growers. The activities of the growers' unions have, however, been wider than the sale of cotton for their members, the actual sales through union salesmen comprising but a small part of the cotton crop.

The cotton growers have coöperated chiefly through the Farmers' Educational and Coöperative Union of America or "Farmers' Union" which was organized in 1902, and the Southern Cotton Association which was organized in 1900 but which is no longer active.[3] Other associations and conventions such as the Alliance and the Grange have also been formed at various times, but the Farmers' Union which claims a membership of three million, is the principal active coöperative organization in the cotton trade. It consists of a national body, various state organizations or "divisions," many county organizations, and a still larger number of "local unions." Its membership includes fruit growers, grain growers and other farmers, teachers, ministers and physicians, as well as cotton growers, but the organization is strongest in the cotton states, particularly in Texas, Oklahoma, Arkansas, Georgia, Mississippi and Louisiana.

Coöperation was undertaken by the cotton growers as the result of a long period of low prices. The Bureau of Crop

[1] Copeland: p. 354.
[2] Bureau of Corporations: Cotton Exchanges, Part V, p. 353.
[3] *Ibid.*, p. 321; G. H. Powell: Coöperation in Agriculture, p. 185.

Estimates has estimated that the average cost of producing a pound of cotton exceeds 8 cents,[1] yet from 1890 to 1904-1905 the average price at New Orleans with the exception of two seasons was less than 9 cents a pound, and during some seasons went below five and six cents. The movement became especially active in 1904-1905 when the average price at New Orleans, after rising to 12.2 cents in the previous year, again fell to 8.7 cents, but it received a set-back in 1907-1908 when the financial panic together with other conditions made impossible the Union's demand for a grower's price of 15 cents.

The coöperative farmers' unions have been active in various ways. They have endeavored to restrict production by reducing cotton acreage. Their general policy in this regard has been to encourage the farmers to grow less cotton and more corn or other diversified crops, but they have also at times advised members to plow up cotton fields which were already planted. The Southern Cotton Association was especially active in discouraging cotton production in 1905-1906, and the agitation appears to have been temporarily effective, for the acreage harvested during that season fell to slightly over 26,000,000 acres, from 30,000,000 in the previous season. Since then the cotton acreage has risen to over 37,000,000 acres and it is impossible to judge the full effect of later efforts to restrict the production of cotton.

The coöperative unions attempted to maintain cotton prices by recommending minimum prices for the crop, varying from 10 to 15 cents a pound. To enable the members to hold their crop until the recommended prices are paid they have established some 1,600 warehouses. These warehouses, which are mostly of small capacity, are usually operated by separately organized companies or associations. They store the cotton for members, obtain loans for them through regular banking channels at favorable rates of interest with the stored cotton as security, and as formerly stated classify and grade, weigh, sample and sell the cotton when instructed to do so. The actual effect of the price-fixing and warehouse policy cannot

[1] Estimates for years 1909 and 1910, Farmers' Bulletin No. 641, p. 14.

be accurately judged, for cotton prices are influenced by many varying conditions. The growers have not received the prices urged by the unions and the warehouses have handled but a small share of the total cotton crop. Efforts have recently been made to consolidate the local warehouses into central companies, with central agents to act for them in marketing their cotton.

The producers' unions have also endeavored to restrict production by discouraging the use of commercial fertilizers. Some of them, however, have organized companies to operate fertilizer plants. The "Farmers' Union" has formed corporations or associations to operate gins, to purchase supplies, own newspapers and engage in other business enterprises. It has urged a legislative program which it regards as beneficial to the farming population, and it is also a secret organization which acts in a fraternal, educational and social capacity.

### The Determination of the Growers' Prices

As in the case of country grain prices, the prices received by the growers of cotton are based primarily upon the prices prevailing at the large central markets which reflect the combined judgment of the buyers and sellers of the world. Cotton producers' prices, however, are more complex than those paid to grain growers. The latter are based directly upon the price at which grain is sold at the large primary markets, the grain buyers knowing that the relation between spot prices and the prices of future contracts on the grain exchanges is usually sufficiently definite to enable them to readily hedge should they desire to do so. Many cotton buyers also desire to protect themselves against losses resulting from fluctuations in cotton prices by hedging in the speculative cotton markets, i. e., when buying cotton they wish to sell an equal quantity of future contracts and when contracting to deliver cotton which they have not as yet purchased they wish to purchase an equal quantity of future contracts.[1] The cotton exchanges

[1] *See* chap. vii, p. 156.

at which this hedging is done are mainly those at New York, New Orleans and Liverpool. Future and spot cotton prices, however, have not in the past borne the definite relationship to each other—they have not maintained the substantially exact parity which is maintained in the grain trade. Owing largely to the right to deliver many different grades of cotton on a future contract which is made out in terms of middling cotton and the failure to establish the "differences" between the various deliverable grades with exactness, cotton futures have frequently sold at an abnormal discount as compared with the prices paid for spot cotton at the large spot markets. Since many cotton buyers consider hedging essential to the economical handling of the cotton crop and cotton "futures" are necessary in order to hedge, the failure to maintain a parity between the prices of spot cotton at the large cotton markets and the price of futures has obliged such cotton buyers to base the country price primarily upon the price of future contracts.

The following statement by the United States Bureau of Corporations indicates the extent to which producers' prices are based upon future contract prices:

A matter of great importance to the current discussion is that these interior buyers very generally base their bids on the future quotations of some cotton exchange. That is to say, in arriving at the prices which they will pay producers they constantly consult the future market and add to or deduct a certain number of points, technically known as "limits," according to the state of the market, the grade of the cotton, or other circumstances. In the case of a merchant having buyers in the interior, the limits which are thus to be added to or deducted from the contract price are determined at the head office. They are sent to the field representatives to govern purchases from cotton producers and country merchants. These interior buyers, in case they do not have ready access to future quotations, are kept advised by the head office of any important changes in them and they use these future prices in connection with the limits furnished them in making their purchases.[1]

[1] Report on Cotton Exchanges, Part IV, p. 50.

Prior to the application of the "Cotton Futures Act" of August 18, 1914, the cotton buyers did their hedging on any one of the three great speculative exchanges, and they shifted their hedges from one to another, according to which market was best adapted at any particular time. They likewise based their buying prices upon the future prices of any one of these exchanges, for they knew what middling cotton was normally worth at any point in the cotton belt as compared with the prices at which futures were selling in New York, New Orleans or Liverpool. Knowing the correct price for middling cotton they could readily judge how much more or less should be paid for the higher and lower grades. Since the enactment of the above-mentioned act American concerns have been unable to hedge on the Liverpool or any other foreign exchange because of a prohibitive tax of two cents per pound. They have, however, continued to hedge on the New York and New Orleans exchanges although on a somewhat smaller scale than formerly; and foreign cotton-purchasing concerns have continued to hedge on the Liverpool Exchange.

The common practice of the large as well as of numerous small buying concerns is to instruct their interior buyers to purchase at a given number of "points" (hundredths of a cent) "off" or "on" the price at which future contracts are selling at some one of the speculative exchanges. Whether these so-called limits will be "off" or "on" will depend upon varying conditions such as the month selected for hedging, the extent to which the futures are selling at a discount, whether the prices are paid for delivery at the interior market, at the port of shipment or at final destination and whether or not transportation and other costs are included in the limits. Instead of calculating a limit "on" or "off" the future price, a merchant, exporter or broker may compute a definite price as a guide for his buyers. In any event the price paid to the grower ordinarily is one that is based upon the future prices of one of the speculative exchanges minus freight, compress, purchasing and handling costs and an additional amount to cover any uninsured risks incident to the business and a dealer's profit.

In the United States cotton is commonly bought at gross weight—lint and tare—but in selling to a foreign buyer the American exporter is usually required to sell at net weight and at c. i. f. (cost, insurance and freight) prices. Having received an offer from Liverpool, the exporter in addition to the usual deductions makes an allowance of 6 per cent. of the gross weight of the cotton to cover tare, and deducts ocean freight and insurance. When a foreign cotton importer, for example, after examining the price of futures on the Liverpool Exchange bids sixpence for cotton delivered in Liverpool on c. i. f. and 6 per cent. terms, the American exporter calculates his buying price by deducting from 12 cents (the equivalent of sixpence) the following amounts:

| | | |
|---|---|---|
| Tare, 6 per cent. of 12 cents | 72 | points |
| Inland freight and compressing, say | 50 | " |
| Ocean freight, say | 55 | " |
| Insurance, say | 11 | " |
| Expense of doing business, say | 12 | " |
| Profit, say | 10 | " |
| Total | 210 | " |

Deducting 2.10 cents from 12 cents leaves 9.90 cents as the price at which he hopes to purchase the cotton from the farmer.[1] This calculation contains a fixed profit of 50 cents per bale (10 points) and in addition a hidden profit of 19 points due to the deduction of 6 per cent. (72 points) for tare, although the bale purchased from the farmer contains only about 4.4 per cent (53 points) of tare. The hidden profit which is due to the differences in the tare rules applicable in the United States and foreign countries is contingent, for competition may compel the exporter to share it with the grower by paying him more than 9.90 cents, and the foreign buyer may in case the actual tare is ascertained by physical test present a claim for over-tare.

While the prices paid to the cotton growers are based primarily upon the future prices of the speculative exchanges,

[1] Bureau of Corporations: Cotton Tare, p. 36.

they are frequently affected by other considerations. There are numerous local buyers, especially some of the country merchants, who do not calculate their prices with the care that the larger exporters and brokers do; there are local spinners who do not need to deduct freight, compressing and other handling costs; and cotton may also be shipped to the large interior points of concentration or the ports on consignment and sold at the spot prices which are there paid. Competition between local buyers, therefore, and the ability of some growers to sell in the large spot markets, obliges the local buyers to modify their calculations whenever the future contracts sell at abnormal discounts as compared with the cotton prices of the large spot markets. An Oklahoma cotton firm, for example, which in 1906-1907 computed its buyers' limits with reference to the New York future market, gradually changed its limit from 60 points "off" on September 25, to 10 points "off" on January 7; "even" on January 14; 10 points "on," on January 21; and 30 points "on" on February 11: because the New York futures were selling at an increasingly abnormal discount.[1] The season of 1906-1907 is an extreme instance because the New York revision committee at that time fixed grossly erroneous differences between middling cotton and the other deliverable grades, but it illustrates how the cotton buyer cannot, except temporarily, disregard the prices paid in the large spot markets.

It is to be understood, also, that in applying the limits based upon the price of cotton futures, the local buyers exercise their judgments as to the quality of any particular lot of cotton. Limits based upon middling cotton are modified in buying cotton of higher or lower grade, and different staple lengths, but there is much complaint that the growers of high-grade and long-staple cotton do not always obtain the relative prices to which they are entitled.[2] They also take account of the amount of tare. Owing to the practice of buying cotton at gross weight growers sometimes believe that they are re-

[1] Bureau of Corporations: Cotton Exchanges, Part IV, p. 58.

[2] "The Relation of Cotton Buying to Cotton Growing," The Bureau of Plant Industry, Bulletin No. 60, p. 7.

ceiving the price of cotton for the bagging and bands on the bale, but it is generally understood in the trade that this view is fallacious. In determining the price of cotton futures and spot cotton at the central markets full allowance is made for the customary amount of tare, and if a particular lot is over-tared the local buyers or spinners will adjust the price paid, make an allowance in the weight, or refuse to purchase the cotton.

## BIBLIOGRAPHY

*See* references designated by an * appended to chap. vi, pp. 134, 135.

# CHAPTER VI

## CENTRAL COTTON MARKETS: THE DISTRIBUTION OF COTTON

Having described the local cotton market and the manner in which the growers dispose of their crops, it is now proposed to trace the cotton crop in its movement from the local buyers to the spinning mills of the world. As the growers sell their crops in different ways so the portion which is shipped out of the cotton belt is sold by merchants, exporters, brokers and factors in different ways, is shipped to widely varying markets, and moves over varying routes.

### Supply and Distribution

The total annual supply of cotton in the United States shown in Table VII is the supply for the year ending August 31, that is for a period extending from one cotton harvest to another. It is, therefore, in excess of the crop grown during the preceding season, for it is made up not only of current ginnings but also of cotton on hand at the beginning of the year, the imports of cotton from abroad, and the quantity of linters produced during the year.

**Cotton Exports.**—Although the quantity retained for use in American mills is slowly advancing as compared with the shipments to foreign mills, the cotton industry is still dependent chiefly upon the export trade. During the years ending August 31, 1912, 1913 and 1914 (*See* Table VII) 59.7, 54.2 and 51 per cent., respectively, of the total cotton supply and an equivalent of 66, 62 and 60 per cent. respectively of the total crop of the preceding season, was shipped abroad. Nearly four-fifths of the total cotton exports are shipped to

the United Kingdom, Germany and France. For many years the first of these countries took the bulk of all the cotton exported from the United States, and in the fiscal year 1914 [1]

TABLE VII

SUPPLY AND DISTRIBUTION IN YEARS ENDING AUGUST 31, 1912, 1913 AND 1914*

| Item | 1912 | 1913 | 1914 |
|---|---|---|---|
| Crop of previous season | 16,109,349 | 14,090,863 | 14,613,964 |
| Total cotton supply of United States | 17,896,226 | 16,275,734 | 16,492,408 |
| Cotton exported | 10,681,758 | 8,800,966 | 8,914,839 |
| Cotton consumed in United States | 5,367,583 | 5,786,330 | 5,884,733 |
| In cotton-growing states | 2,712,223 | 2,960,518 | 3,023,415 |
| In other states | 2,655,360 | 2,825,812 | 2,861,318 |
| Cotton destroyed by fire | 70,000 | 40,000 | 45,000 |
| Cotton on hand at end of year | 1,776,885 | 1,648,438 | 1,647,836 |
| In mills of cotton-growing states | 241,611 | 234,509 | 213,418 |
| In mills of other states | 629,035 | 543,649 | 537,801 |
| In public storage places | 556,239 | 495,280 | 576,617 |
| Elsewhere (estimated) | 350,000 | 375,000 | 320,000 |

* As reported by U. S. Census Office in Bulletin No. 128, p. 8.

the British proportion still comprised 37.6 per cent. of the total. The rapid rise of the cotton-manufacturing industries in other countries, since the later nineties, has, however, reduced the relative preponderance of the British market. Nearly 30 per cent. of the total exports are now destined to Germany, 11 or 12 per cent. to France, and smaller quantities to a wide range of foreign markets extending from Italy, Spain, Belgium, Austria-Hungary, the Netherlands, and Russia in Europe, to Canada and Mexico in the Western hemisphere, and Japan, China and India in the Orient. Owing largely to irregularities in the available supply of East Indian cotton, which is the chief source of supply for Japanese mills,

[1] Returns of Bureau of Foreign and Domestic Commerce for Fiscal Year Ending June 30th.

the exports to Japan have in recent years been subject to violent fluctuations.

All but 16 or 17 per cent. of the cotton exports are shipped from the ports of the cotton-growing states. Galveston, alone, exports from 2,700,000 to 3,800,000 bales annually, and the three principal cotton ports—Galveston, New Orleans and Savannah—handle about 70 per cent. of all the cotton exports. The remainder is exported principally from New York, Wilmington (North Carolina), Brunswick, Mobile, Charleston, Pensacola, San Francisco, Boston, Baltimore and Seattle.

**Shipments to Northern Mills.**—Of the 5,300,000 to 5,800,000 bales of cotton consumed by domestic mills in recent years (*See* Table VII), from 2,600,000 to 2,800,000 bales, or less than one-half, were consumed in the mills of New England and other northern states. As reported by the New Orleans Cotton Exchange, the shipment of American cotton to the northern mills comprised 2,488,000 bales in the year ending August 31, 1913, and 2,514,000 in 1914 or about 17 per cent. of the season's crop.[1]

The shipments to northern mills are made over two general routes—"overland" and coastwise. From 44 to 47 per cent. of the total shipments in the crop years 1912-1913 and 1913-1914 were made over the former route, the railroad freight rates being so arranged that cotton can readily move direct to northern mill centers. Cotton moving northward by rail passes through the various so-called "northern gateways" such as St. Louis, Hannibal, Cairo, Louisville, Cincinnati, Rock Island, Parker and other cities lying mainly on the Ohio and Potomac rivers. The coastwise route, which for many years handled the bulk of the northern cotton shipments, still handles over one-half of them—56 and 53 per cent. respectively in the years 1912-1913 and 1913-1914. Cotton is regularly shipped northward from each of the southern ports mentioned in connection with the cotton export trade.

**Consumption by Southern Mills.** So rapid has been the rise of the cotton-manufacturing industry in the cotton-grow-

[1] Secretary of New Orleans Cotton Exchange: Report of 1913-1914.

ing states that they have in recent years consumed from 2,700,000 to 3,000,000 bales, or more than the total mill consumption of the New England and other northern states (*See* Table VII). Their takings of American cotton during the years ending August 31, 1913 and 1914 aggregated 2,969,000 and 3,037,000 bales respectively or about 20 per cent. of the previous season's crop.[1] Southern mills consume but small quantities of foreign cotton because they require less high-grade, long-staple cotton, such as is imported from Egypt by the northern mills. The southern mills are especially important as spinners of yarn, a part of which is woven in the South and the remainder of which is used in the northern textile industries.

### Direct Shipments

About one-half of the cotton purchased from the growers at the many local cotton markets of the South is shipped directly from the local shipping points to the southern and northern mills or to the ports of shipment without first moving through the large central markets of the interior. Much of the cotton shipped directly to the ports, moreover, has been billed to northern mills or foreign importing merchants from interior compress points on, through bills of lading, and merely passes through the ports in transit. This is particularly true when the cotton locally purchased is to be applied on a contract already booked.

**Marking and Tagging.**—Before the cotton leaves the local shipping points the bales are tagged so that they will not lose their identity. Ordinarily lots of from twenty-five to one hundred bales are tagged with the same mark, such as "Hark," which they retain thereafter throughout their journey to the mills. While deliveries may be made on cotton contracts by grade as in the case of grain, the cotton after it leaves the growers does not lose its identity as the grain which is stored in bulk usually does.

[1] Secretary of New Orleans Cotton Exchange: Report of 1913-1914.

**Compressing Flat Bales.**—Cotton shipped direct from local points to mills or ports must in many cases be unloaded en route in order that the "flat" gin bales may be "recompressed" into bales of about one-half their original thickness. The law as well as the carriers require this recompression at the first compress passed en route to port or other distant destination so as to facilitate shipment and economize railroad and steamship equipment. The compresses are usually owned and operated either by the railroads, by cotton-buying concerns, or special compress companies, but few gins as yet being equipped with compresses. Compression is so closely connected with the transportation service that it is regulated by the state railroad commissions and by the Interstate Commerce Commission.[1]

The cars containing the flat bales are usually switched in on one side of the compress and those receiving the compressed bales are placed on the other side. Meanwhile compress receipts are issued, for during the busy season fifteen or more days may pass before the cotton is finally loaded out of the compress. These receipts, a copy of which is reproduced in Form No. 15, are accepted by bankers as security for loans, and when cotton is sold at the compress a transfer of the receipts constitutes a delivery. In many cases the cotton is shipped to the compress on local bills of lading and at local rates, with the understanding that upon satisfactory presentation of proof of reshipment the difference between the local rates and the relatively lower through rates will be refunded to the shippers. When the receipt is returned the compress superintendent issues a "clearance" such as is shown in Form No. 16, after which the compressed bales may be forwarded to destination. Upon delivery of the recompressed bales, the compress usually collects its fees of about 10 cents per 100 pounds or 50 cents per bale directly from the railroad which either absorbs this charge in its freight rates or collects it from the shipper or consignee as a special charge. Compression in transit resembles the milling-in-transit privilege mentioned in connection with the grain trade.

[1] *See* 29 I. C. C. Rep. 106; 30 I. C. C. Rep. 467, etc.

**Through Bills of Lading.**—On shipments made direct from compress to destination the railroad issues through rail-

No. 367 Mart, Texas, _____ 190

Received from _____

_____ Bales Cotton

For Account of _____

NOT RESPONSIBLE IN CASE OF FIRE

This receipt must be returned before clearance will be issued

MART COMPRESS CO.

Per _____

FORM 15

road or export (rail-ocean) bills of lading. The shipping concern concentrates these bills at some point where it maintains an office and negotiates a draft drawn upon the buyer or the reimbursing bank designated by the buyer. To the draft are

Mart, Texas. 191

Received of _____

_____ Bales cotton to be pressed and delivered to the I. & G. N. R. R. for shipment

to _____

Mark _____ Patches

_____ Bales _____

_____ Bales

_____ Bales _____

_____ Bales Bands:

_____ Bales _____

MART COMPRESS CO.

_____ Sup't

FORM 16

attached the through bill of lading, an invoice, and, if it is an oversea shipment, a marine insurance certificate.[1]

**Cotton Insurance.**—Some of the larger growers take the precaution to insure their crop, but the smaller farmers sel-

[1] *See* p. 312.

dom insure their cotton until it is put into warehouses for storage. After the cotton has left the growers, however, it is regularly insured against loss by fire. Many merchants, exporters, brokers or factors carry policies which cover all the cotton purchased or handled by them, the insurance companies being notified each night of the amount of the day's purchases and sales. Usually at the end of each month the company presents a bill for premiums based upon the amount of cotton insured during the month. Cotton exported to oversea countries is, moreover, covered by a marine insurance policy from the time that it reaches ship's side, the premium to be paid either by the seller or buyer according to whether the cotton is sold on c.i.f. or f.o.b. terms.

### Interior Points of Concentration

While about one-half of the cotton is shipped direct from local shipping or compress points to local mills, seaports or outside destinations, the other half is concentrated at the central cotton markets of the interior, or so-called "interior points of concentration." As shown on Map No. VI in the preceding chapter there are thirty-five or more of these inland markets the largest of which from the standpoint of cotton receipts are Houston, Texas; Memphis, Tennessee; St. Louis, Missouri; Augusta and Atlanta, Georgia; Cincinnati, Ohio; Little Rock, Arkansas; Montgomery, Alabama; Columbia, South Carolina; Selma, Alabama; Shreveport, Louisiana; Meridian, Mississippi; and Dallas, Texas. In the crop year 1911-1912 the receipts at the twenty-eight principal interior towns totaled 7,660,000 bales,[1] or about 47 per cent. of the entire cotton crop. Among the interior markets are several of the "northern gateways," which are points of concentration as well as points through which overland shipments pass in transit.

[1] New York Cotton Exchange: Annual Report of the Cotton Crop (1911-1912), p. 17.

**Sources of Supply.**—A part of the cotton received at the large interior markets is merely unloaded to be recompressed, but the bulk of it is shipped there by exporting houses and brokers for resale, and is consigned by local merchants and growers to the factors located at these points or is hauled there by growers from the surrounding community. The largest amount of concentration is done by the large exporting houses who do not limit their local purchases to orders on hand but buy all the cotton they are able to obtain at current prices. Whatever they can apply on contracts already booked they ship direct to destination, and the remainder they store in the large warehouses at the interior points of concentration.

**Functions.**—The larger interior points are not only places at which cotton is held until it has been sold for shipment to spinners or foreign importers, but are central cotton markets. They provide facilities for the storage, weighing, compressing, sampling, grading and inspection of cotton. They provide a market for the sale and resale of cotton, and it is there that cotton bales sold for shipment are "patched" as in the case of those shipped direct to destination from local compresses. At some of the largest interior markets, cotton exchanges have been organized and rules have been laid down for the conduct of the spot cotton trade. The larger markets publish daily cotton prices which are viewed not only by the dealers at these markets, but by spinners and outside cotton merchants, by local buyers, and by the growers. While in the main these prices follow the prices at which future contracts sell in New York, New Orleans and Liverpool, they do not follow them when the futures sell at an abnormal discount. In this way the spot markets of the larger interior towns, together with those which are at the larger ports, sometimes affect the prices paid to the growers of cotton.

**Extent of Competition.**—There is more competition between these central cotton markets than there is between the primary grain markets, for they are more numerous, the districts from which they receive their supply are less definite,

and the total supply of cotton is relatively smaller. There is, moreover, considerable competition within some of these markets, the range of buyers being wider than in the primary grain markets.

**Purchase of Cotton from Growers, Local Merchants and Factors.**—On the important market days nearby growers frequently haul their cotton direct to the cotton yards of the interior points of concentration and sell it at current prices. Growers as well as country merchants located at a distance usually consign it to factors or commissionmen who may sell it immediately or store it in warehouses which are owned by the railroads, cotton buyers, warehouse companies, or in some cases by coöperative concerns. The factors usually obtain a commission of about $2\frac{1}{2}$ per cent. for buying or selling cotton. The selling at some of the central markets is done in accordance with rules laid down by the spot exchanges of which the various buyers are members, and, where no exchange has been organized, the trading is nevertheless conducted in accordance with trade custom.

The cotton may be sold to the central market buyers in various ways: (1) Cotton in the yards or warehouses is sold on the "spot," i. e., samples are extracted from the bales and the sale is based on them. (2) It may be sold "to arrive" in which case the cotton is sold at the central market before it arrives there from the local shipping points. Such sales may be made on the basis of samples, by grade or "description" or by a combination of both sample and grade. The samples are sometimes guaranteed by the seller, but in any event if the cotton sold does not agree with the samples or grades provided by the seller, the buyer may insist upon a readjustment of terms or under certain conditions, as provided by the rules applicable in the various markets, refuse to receive the cotton when it arrives. (3) Cotton may also be sold on f. o. b. terms, for delivery either at the central market or at a designated port. In Houston, Texas, for example, cotton may be sold for delivery f. o. b. barge or railroad at Houston or ship at Galveston. When sold for delivery at a point beyond the central market, the cotton is said to be sold "in

transit." The f.o.b. sale differs from the usual "to arrive" sale in that the latter requires the delivery of the cotton on the spot at the central market, the seller paying all delivery costs, while the former sale is made at a price which includes delivery charges. On shipments from a local shipping point an f.o.b. sale requires the buyer to pay the railroad freight rate, compress fees, drayage and other delivery charges except such as may be otherwise agreed upon or provided for in the exchange rules.

### Cotton Receiving Ports

Although the principal cotton-exporting ports have been mentioned in connection with the export trade, it should be noted that the export trade by no means portrays the volume of cotton handled at the various cotton-receiving ports. The coastwise as well as the cotton-export trade is handled at the ports. Some of their receipts come direct from local shipping or compress points, and others from the interior points of concentration. Some cotton passes through them in transit, some is placed in storage, some is handled on through bills of lading, some is rebilled at the ports, and some is used in local mills.

They annually receive from 70 to 75 per cent. or more of the total cotton crop. Their net receipts—the amount of domestic cotton received which has not been transshipped from one port to another and already included in the receipts of the first receiving port—comprised 10,189,000 running bales in the crop year 1912-1913 and 10,539,000 in 1913-1914, or about 72 per cent. of the entire crop. The principal individual receiving ports are Galveston, New Orleans, Savannah, Norfolk and Newport News, Port Arthur and Texas City, Wilmington (North Carolina), Charleston, San Francisco, Brunswick and Mobile. Certain of the northern ports, such as New York and Boston, from which appreciable quantities of cotton are yearly exported, receive but small quantities directly from the interior of the cotton belt.

**Functions of Receiving Port.**—First of all the cotton-receiving ports are shipping centers, and are therefore equipped with docks and wharves where the vessels of the world may obtain the cotton which is drayed or otherwise conveyed from the freight yards or from warehouses to the waterfront. They are also points of concentration, for cotton is shipped to ports as well as to the large interior towns to be held for final sale and shipment, and they are, therefore, equipped with warehouses and cotton yards. They are cotton markets at which all such cotton as has not been sold for shipment in the interior may be bought and sold. Cotton hauled there by nearby farmers, or shipped from the interior by growers or interior buyers, is disposed of by methods similar to those prevailing at the central markets of the interior. Being markets and shipping centers they have rules and facilities for the weighing, inspection and grading, sampling, patching, tare, and delivery of cotton bales. At some of them cotton exchanges have been organized so that the sale and handling of cotton may be conducted in a uniform and orderly manner. As in case of the large interior centers, the great exporting houses either have branch offices or buying representatives at the principal receiving ports.

With one exception all the port as well as interior cotton exchanges constitute spot markets. Many of the dealers at these markets regularly hedge their cotton transactions, but they do so on the speculative exchanges of New York, New Orleans or Liverpool. It is to be noted, however, that one of the largest receiving ports—New Orleans—is equipped with an exchange where cotton futures as well as spot cotton are regularly bought and sold.

### Sale of Cotton to Domestic Mills

**Manner of Sale.**—The northern cotton mills purchase their supply of cotton from the export houses, brokers or other cotton merchants who obtain it at the local markets, the interior points of concentration (including certain northern gateways)

or at the receiving ports. These merchants usually have offices in the large northern cities and agents at numerous mill centers; indeed the main offices of many of the largest cotton houses are in New York. The mill treasurers usually buy on the basis of samples which these agents submit for inspection although they sometimes purchase by grade or description. When the cotton arrives at the mills it is in many cases tested by experts, and if it is of lower grade than the sample the seller is required to make restitution to the mill.[1] It is important that the cotton merchants deliver as nearly as possible the exact quality of cotton purchased, because the mills are engaged in the manufacture of yarn, cloth or other textiles requiring particular grades of cotton. It is for this reason chiefly that the mills do not purchase their supply on the large speculative exchanges, where the grades do not fully account for length or fineness of fiber, and where the contracts permit the delivery of numerous grades. They use the speculative exchanges principally as a price barometer, and in some cases, for hedging purposes. The methods of purchase in the southern mill centers differ from those of the northern mills, only in that they buy directly from cotton growers as well as from merchants.[2]

**Terms of Sale.**—The terms of the contract which the northern mills enter into with the cotton merchants are various. They may contract for full delivery at a specified time, or in monthly instalments. The contract may, moreover, require delivery either on c.i.f. or f.o.b. terms. The former requires the merchant to deliver the cotton at the mill for the agreed price; while the latter, as in the case of shipments from local points in the South to the central cotton markets of the interior or the ports, requires him to deliver it free on board railroad car or vessel. The spinner, in case of an f.o.b. purchase is required to pay all railroad, steamship, compressing, insurance and other shipping charges, unless some of them are especially assumed by the merchant in the contract. At well-

[1] M. T. Copeland: Cotton Manufacturing Industry of United States, p. 180.

[2] *See* chap. v, p. 106.

organized markets, f.o.b. prices are regularly quoted not at a fixed number of cents but at a given number of points "on" the current quotation of futures.

The spinners may also purchase on so-called "spinner's call" terms, i. e., the cotton merchant allows the spinner to call for a specific grade of cotton at a stipulated number of points "on" the actual price of futures at any time which the spinner may elect to name between the making and the maturity of the contract.[1] The actual price in such a purchase is not fixed until the spinner "calls," and it is then the price of the cotton futures of the month mentioned in the contract plus an agreed number of points. The spinner is usually required to "call" at least fifteen days before the shipping month.

**Time of Sale.**—The northern spinners usually buy about one-half of their annual supply before January first and over 60 per cent. before February first. Most of the supply, moreover, is shipped as soon as it is purchased, is stored in the private warehouses of the mills, and paid for within three days after delivery. Although the spinners can insure the risk of a change in the price of cotton by hedging on the speculative exchanges, they prefer to buy their supply early and carry it themselves, rather than to purchase later at prices which ordinarily include the cost of storage in public warehouses, or to run the risk of being unable to obtain the particular grade of cotton desired. The spinners of fine yarn are especially apt to purchase early in the season.

The time of purchase by the southern mills varies more widely than that in the northern states. The relatively few which require long-staple cotton follow the same practice as their northern competitors. The practice of those which use short-staple cotton "depends upon the location, size, and financial strength of the individual mills."[2] On the whole they buy a somewhat smaller proportion of their supply during the picking season, for some of them have less available capital, and in some places they are able to draw upon cotton

[1] U. S. Bureau of Corporations: Cotton Exchanges, Part I, p. 106.
[2] Copeland: p. 182.

remaining in the hands of nearby growers. Some of the smaller mills, with very little available capital, buy only as they obtain orders for yarn or cloth.

## Sale of Cotton in Foreign Markets

**Methods of Sale.**—The methods of selling cotton to foreign buyers varies in each of the three principal foreign markets for American cotton—Great Britain, Germany and France.[1] The American cotton exported to Great Britain is mainly sold or consigned by American exporting houses and brokers directly to Liverpool or Manchester importing merchants. Some American exporters, however, have branch houses in England to handle their sales, and some Liverpool and Manchester houses send buying agents to the large spot markets of the South. The Liverpool importing merchants usually sell the cotton by sample through two brokers—a selling and a buying broker—who stand between the merchants and spinners and receive a commission of $\frac{1}{2}$ per cent. each. Though Liverpool is the principal British market, some of the cotton is handled by Manchester importing merchants, who ordinarily deal directly with the spinners.

American cotton used in Germany is sold mainly in Bremen, and to a lesser extent in Hamburg and Havre, France. Some cotton is sold direct to German spinners, and some is consigned to commissionmen, but the bulk of it is sold to Bremen importing merchants who sell to the mills through agents. The agents, who receive a commission for their services, usually represent several cotton merchants who as far as possible are non-competing.

The leading French market for American cotton is at Havre, where the exporters usually sell either to importers or merchants, the cotton in many cases being sold to importers who in turn sell it to cotton merchants. The sales are made through selling and buying brokers, and the official quotations and sales are recorded by so-called sworn brokers, each of the

[1] Copeland: pp. 354-360.

brokers receiving a commission of ¼ per cent. The cotton merchants sell to spinners at the mill centers through agents who are paid commissions of from ½ to 1 per cent.

The cotton importers and merchants in each of these countries commonly hedge their transactions, those of England and Germany chiefly on the Liverpool and New York Exchanges, and those of France chiefly on the Havre Exchange. The spinners of Germany and France also hedge in many cases, while those of England do so less frequently, the difference being due to the fact that in England the cotton supply is held largely by the importing merchants, the mills usually keeping but small quantities in their own warehouses, while in Germany and France as in the United States the spinners buy a larger share of their year's supply early in the season.

**Terms of Sale.**—The sales by American exporters to the foreign importers, merchants or mills are made on contracts similar to those entered into with American spinners, except that a larger proportion are made on c.i.f. terms, and that the sales are based on net instead of gross weight. The common practice is to require the exporter to deduct 6 per cent. from the invoice to cover tare, the cotton being sold on so-called c.i.f. and 6 per cent. terms.

The tare rules of the various countries are essentially confusing and give an element of uncertainty to the foreign sales. While the flat gin bales of the growers usually contain from 19 to 24 pounds of tare, the 6 per cent. rule practically compels the exporters to add sufficient patches to increase the tare of a 500-pound compressed bale to 30 pounds. It is owing to this practice that the exporter is sometimes said to make his profit out of the "patches" which he adds to the bale. Such a profit, however, is indefinite and contingent, for competition may in some cases require him to share it with the grower or local merchant, and the tare rules of the foreign markets permit the foreign buyer to present a claim for tare in excess of fixed weights which are different in the various foreign markets but which come roughly to about 26½ pounds on a 500-pound bale. The rules provide detailed methods for the ascertainment of actual tare by physical tests, and

when such tests are made the buyer may present a claim for the 3½ pounds or other excess tare.[1] Since the making of a physical test requires time, the foreign buyer, if he is in a hurry to receive the cotton, may either waive a claim, or agree to an arrangement providing for "friendly allowances," that is, the buyer may agree to a deduction which is smaller than the actual over-tare. If he is not anxious to receive the cotton quickly he will insist upon a physical test. In order to protect himself from the possibility of loss resulting from the 6 per cent. and physical test rules applied in foreign markets, the exporter endeavors when possible "to take account of the value of this discrepancy of 3½ pounds in the price that he charges the foreign buyer." [2]

C.i.f. and 6 per cent. contracts sometimes contain a so-called "franchise" clause, providing for a guarantee that the invoice weights will not exceed the weight of the cotton upon arrival at the foreign market by more than 1 per cent. Weights frequently vary because of differences in atmospheric conditions, and if such variation reduces the weight by more than 1 per cent., the foreign buyer may present a claim for the excess. Since the American shipper is not allowed a similar claim for an increase in the weight of the cotton, he in many cases adds 1 per cent. to the actual weight when he makes out his invoice. Both the tare and franchise rules at times lead to serious abuses in the cotton trade.

## The Making of Cotton Prices

**Spinners' and Importers' Prices.**—As the prices paid to the growers are usually based upon the price of future contracts at the great speculative exchanges,[3] so also are the prices at which the cotton is sold to the mills or foreign importers based principally upon the price of futures. The prices at which the cotton is sold to the domestic mills or in foreign markets

[1] U. S. Bureau of Corporations: Cotton Tare.
[2] *Ibid.*, p. 28.
[3] Chap. v, pp. ——.

are usually calculated at a certain number of cents or points "on" the price of futures and the difference is sufficient to cover all shipping and handling costs, uninsured risks, and a profit on the transaction. The prices paid to the growers and those received from the spinners and foreign importers are of course inseparably interdependent, and it is the farmer's price which frequently bears these costs, uninsured risks and profits, because conditions of supply and demand are often favorable to the buyers. In order that the cotton shippers may do business profitably the difference between the prices which the growers receive and those which the spinners or foreign importers pay must be sufficient to cover all of these items.

Cotton shipping costs, which differ according to the point of origin and destination, the manner of shipment and other considerations may include any or all of the following items: freights from the interior, compressing charges, ocean freights, fire and marine insurance, wharfage and dock dues, storage, weighing, sampling, and inspection fees, brokerage and commissions, exchange supervision, weight franchise, foreign exchange brokerage, patching and repairing bagging, interest, and expenses of doing business such as wages, salaries, telegraph and cable charges.

The ocean freight rates vary widely from time to time, and have increased greatly since 1911. In 1912 the mean rates on cotton shipped to Liverpool from New Orleans and Savannah were 52.7 and 45.9 cents per 100 pounds respectively.[1] In 1914 during the European War they became wholly exorbitant, but it is likely that the abnormal increase will not prove permanent. The railroad rates from the interior to the ports range from less than 20 to over 75 cents per 100 pounds, and probably average from 40 to 45 cents. The mean coastwise rates from New Orleans and Savannah to New York were 25 and 18 cents respectively in 1912; and the mean railroad rates from Memphis as a typical interior market, were 42.5 cents to New York and 47.5 cents to Boston.[2]

[1] U. S. Department of Agriculture Year Book (1912), p. 709.
[2] *Ibid.*, pp. 707-708.

The total shipping, handling and trade costs on a shipment from the interior of the cotton belt to Liverpool have not until recently exceeded 1 cent a pound, although in 1913, largely because of increased ocean freight, they advanced to 1½ cents on shipments from some interior points. The total costs of a shipment from the interior to northern mills usually are somewhat less than those of European shipments. They probably average less than 1 cent a pound, because of the somewhat lower transportation costs. The total costs in the sale of cotton direct from farmer to southern mill usually do not exceed 50 cents per bale of 500 pounds.

The main trade risks of the cotton exporter or broker are insured by hedging, but there may be certain additional risks such as his inability at times to hedge with exactness and uncertainties resulting from tare and franchise rules. All such uninsured risks are so far as possible either deducted from the farmer's price or added to the spinner's or importer's price.

**The Factors Affecting Future and Central Market Prices.**—The factors which enter into the price of future contracts, upon which the farmer's, spinner's and importer's prices are mainly based, are essentially the same as those outlined in connection with the prices[1] paid for grain at the primary grain markets.

It is on the great cotton exchanges at Liverpool, New York and New Orleans that a world's cotton price is determined. It is there that the cotton buyers and sellers of the world concentrate their judgment as to the future supply of and demand for cotton. The various factors of supply and demand differ from those mentioned in connection with the grain trade only in that the cotton trade is on the whole more competitive, that the foreign cotton market is more important, that the trade in raw cotton is free from tariff restrictions, and that the effect of crop pests is more widely felt than in the grain trade. The extent of the cotton-growing area affected by the boll weevil is shown in Map No. VI of the preceding chapter.

[1] *See* chap. iv, p. 88.

The spot cotton prices paid in the great spot markets, alike those at Liverpool, New York and New Orleans and those at other central cotton markets, usually follow the price of future contracts. When, however, the future prices, owing to the right to deliver numerous grades on a future contract and the failure to properly adjust grade differences, or for other reasons, sell at an abnormal discount, or when they are temporarily affected abnormally by manipulation, the spot prices at the central markets may become the real gauge of cotton values. At such times the prices paid to the growers and those received from the spinners and foreign importers, although based upon the price of futures, are adjusted with reference to the spot prices paid in the leading central markets.

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* References designated by * apply also to chap. v.

## CHAPTER VII

### RELATIONS BETWEEN SPECULATIVE EXCHANGES AND THE SALE OF FARM PRODUCE

One of the most striking characteristics of the trade in farm products during the last sixty-five years has been the organization of exchanges, and as the greatest produce exchanges are those in the grain and cotton trades, they may conveniently be discussed at this point in the organization of the trade in farm products. Exchanges are not, however, confined to the grain and cotton trades. Flour, provisions, flaxseed, timothy, clover and other grass and field seeds, hay and straw, hops, and similar farm commodities are commonly bought and sold on the grain exchanges; cottonseed products are dealt in on some of the cotton and grain exchanges; and some produce exchanges have branched out into non-agricultural commodities. The New York Produce Exchange for instance has rules for the purchase and sale of petroleum, oils, waxes and fats, and pig iron, although there is relatively little exchange trading in these commodities. Other agricultural industries in which exchanges have been organized are the live-stock,[1] wool,[2] tobacco,[3] milk, fruit[4] and vegetable industries, and special exchanges have likewise been organized for the purchase and sale of certain semi-agricultural commodities such as dairy products, green coffee and raw sugar.

In one sense there is speculation in the purchase and sale of practically all agricultural staples whether on exchanges or otherwise, for many dealers and manufacturers and an increasing number of growers purchase or sell when in their

[1] Chap. ix, p. 188.
[2] Chap. x, p. 216.
[3] Chap. xi, p. 231.
[4] Chap. xii, p. 256.

judgment the prices are the most favorable to their particular purposes. The term "speculation" when applied to produce exchanges, however, has a narrower and more specialized meaning, i. e., it refers to the purchase and sale of contracts for future delivery or so-called "futures." In this sense the exchanges are known either as "spot" or speculative exchanges, the former confining their activities solely to a spot or "cash" business and the latter providing rules for the purchase and sale of contracts for future delivery as well as of spot produce. Among the purely agricultural industries it is mainly in the sale of wheat, oats, corn, flaxseed, and cotton that a regular trade in "futures" is conducted.

## Organization of Speculative Produce Exchanges

**Speculative Grain Exchanges.**—In the United States, modern grain exchanges began to be organized in the later forties of the nineteenth century. The Chicago Board of Trade was organized in 1848, the New York Produce Exchange in 1850, the St. Louis Merchants' Exchange in 1854,[1] the Kansas City Board of Trade in 1869, and the Minneapolis Chamber of Commerce in 1881. Grain exchanges have also been organized in Duluth, Milwaukee, Omaha, Toledo, Detroit, Buffalo, Philadelphia, Baltimore, Boston, and in nearly all the remaining primary and seaboard grain markets of the United States. Practically all the large grain exchanges conduct future as well as cash grain transactions.

In Europe, the Antwerp Bourse was organized as a modern cash grain exchange as early as the middle of the sixteenth century.[2] The number of foreign exchanges, however, where grain futures are bought and sold, is limited, the principal foreign speculative grain exchanges being at Winnipeg, Liverpool, Paris and Budapest. There is some speculation on the Berlin grain exchange but the sale of grain futures there as elsewhere in Germany is hampered by law.

[1] Year when it assumed functions of a grain exchange.

[2] S. S. Huebner: in the *Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 1.

**Speculative Cotton Exchanges.**—The Liverpool Cotton Association was organized in 1842, the New York Cotton Exchange in 1870, and the New Orleans Cotton Exchange in 1871. A limited volume of futures is also sold on the Havre and Hamburg cotton exchanges, but most of the organized speculation in cotton is conducted on the great exchanges at Liverpool, New York and New Orleans. Trading on the Bremen Cotton Exchange, which is the leading German cotton market, is confined to spot transactions, and the speculation in futures at Hamburg is limited, for the sale of cotton futures in Germany is legally restricted to contracts "for actual delivery." One of the reasons, likewise, why none of the cotton exchanges[1] located in the American cotton belt, with the exception of the New Orleans Cotton Exchange, are future markets, is that the sale of cotton futures is legally prohibited in many of the southern cotton states.

**Corporate and Business Organization.**—With a few exceptions such as the Kansas City Board of Trade which is a voluntary association, the large grain and cotton exchanges of the United States are regularly incorporated associations. They have the usual corporate officials, such as a president, one or more vice-presidents, a secretary and treasurer, and a board of directors or managers. Members of the exchanges hold certificates of membership which upon payment of the required transfer fee are transferable to any person eligible to membership who is not opposed by the board of directors. The holder of such a certificate is said to hold a seat on the exchange. While the methods of election to membership vary the rules of the Chicago Board of Trade are perhaps typical. These rules provide that:

> Any male person of good character and credit, and of legal age, on presenting a written application indorsed by two members, and stating the name and business association of the applicant, after ten days' notice of such application shall have

[1] Spot cotton exchanges have been organized at Houston, Memphis, Little Rock, Augusta, Charleston, Galveston, Mobile, Natchez, Vicksburg, Savannah, Selma, Shreveport, St. Louis, Norfolk and Portsmouth.

been posted on the bulletin of the exchange, may be admitted to membership upon approval by at least ten affirmative ballot votes of the board of directors, provided that three negative ballot votes are not cast against such applicant, and upon payment of an initiation fee of ten thousand dollars, or on presentation of an unimpaired or unforfeited membership, duly transferred, and by signing an agreement to abide by the rules, regulations and by-laws of the association, and all amendments that may be made thereto.

The membership of any large grain or cotton exchange comprises a wide range of business men who are interested in the purchase, sale, storage, elevation, shipment, exportation, manufacture, insurance, transportation or financing of the commodities dealt in on the exchange.[1]

In order to conduct their business expeditiously the exchanges are equipped with numerous committees. Each exchange has an arbitration committee to adjust disputed claims between members, and a committee of appeals to review such cases as may be appealed from the arbitration committee. Though the exchanges differ as to their other committees they ordinarily have committees for complaints, finance, floor, membership, trade or rules, transportation, house, information and statistics, law, real estate or rooms and fixtures, and quotations. They may also have committees, bureaus or departments to supervise or perform specific duties in connection with weighing, inspection, sampling and grading, inspection of elevators or warehouses, registration of warehouse receipts and other special matters. Exchanges on which various commodities are bought and sold may have special committees, bureaus or departments in charge of the trade in particular commodities such as grain, provisions or flour.

An important link in the organization of some of the speculative exchanges is the clearing house in which contract margins are cleared at the close of each day's business session.

[1] For membership of New York Produce Exchange *see The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 218.

In order to protect both parties to a future contract the exchanges authorize the buyer and seller to require the deposit with some designated exchange official, approved bank or clearing house of a margin equivalent to 10 per cent. or other proportion of the market price. The concerns which have become members of the clearing house, instead of calling upon each other individually for margins, may settle with the clearing house at a certain time each day after all their various trades have been checked.

The produce exchanges do not themselves deal in grain, cotton or other farm staples, all buying and selling being done by the individual members. The exchanges merely provide the trading rules, supervise the trading in various ways, provide rooms where it may be conducted, adjust disputes and perform various other necessary functions. The income of the exchanges is not derived from the purchase or sale of cotton or grain by them, but from rents, buildings, investments, membership dues, the sale of price quotations or similar sources, and in some instances from inspection or other fees for services rendered.

## Future Contracts

Since a produce exchange is said to be a speculative exchange if it authorizes the sale of future contracts it is desirable to define and describe such so-called "future" transactions somewhat more fully.

**Definition of Future Contracts.**—As is stated by the United States Bureau of Corporations, "the system of future trading in cotton, and, for that matter in other staples similarly dealt in, is based on contracts on the part of the seller to deliver, and, consequently, on the part of the buyer to receive, at a time subsequent to the making of the contract, a certain quantity of the product at a stipulated price. . . . A future transaction differs from a 'spot' transaction in that the latter invariably represents goods actually on hand or instantly available at the time the contract is made, and, more

ver, contemplates an immediate or an approximately imme-
iate delivery." [1]

Future contracts are entered into not only on the specula-
ive cotton and produce exchanges, but privately in nearly
very line of business. A farmer may privately contract to
eliver a given number of bushels of potatoes at a specified
rice and at a stated time in the future, a miller may similarly
ontract to deliver flour, a steel mill to deliver rails or plates,
contractor to complete a building. Strangely, such contracts
hen privately made are not regarded as speculative. The
otton and grain exchanges have adopted definite future con-
racts for use in speculative transactions and definite rules
hich their members are required to follow.

The official future cotton contract of the New Orleans Cot-
on Exchange for example, is as follows:

CONTRACT

New Orleans,....., 19....

In consideration of one dollar in hand paid, receipt of which
hereby acknowledged ..... of the City of New
rleans, State of Louisiana, have this day sold to (or bought
om) ..... of the City of New Orleans, State
f Louisiana, 50,000 pounds, in about 100 square bales of cot-
on, growth of the United States, deliverable from approved
torage places for cotton in the port of New Orleans, between
he first and last days of ..... next, inclusive, excepting
olidays as provided in Rule 40 of the Rules of the New Or-
ans Cotton Exchange for the transaction of the Future Con-
act business.

The delivery within such time to be at seller's option, in not
nore than two approved storage places, upon five business days'
otice to the buyer, as provided by the Rules of the New Or-
ans Cotton Exchange.

The cotton to be dealt with herein or delivered hereunder
hall be of, or within, the grades for which standards are estab-
shed by the Secretary of Agriculture, except cotton prohibited
om being delivered on a contract by the fifth subdivision of
ection 5 of the United States Cotton Futures Act, and no
ther grade or grades (subject to the United States Cotton

[1] Report on Cotton Exchanges: Part I, p. 36.

Futures Act, Section 5, and subject to New Orleans Cotton Exchange inspection and classification) at the price of ..... ..... cents per pound for Middling.

In case cotton of grade other than the basis grade should be delivered or tendered in settlement of this contract, the differences above or below the contract price which the receiver shall pay for such grades, other than the basis grade, shall be the actual commercial differences determined as provided in Section 6 of the United States Cotton Futures Act.

Either party shall have the right to call for a margin as the variations of the market for like deliveries may warrant and which margin shall be kept good.

This contract is made in view of, and in all respects subject to, the United States Cotton Futures Act, Section 5, and to the By-Laws, Rules and conditions, not in conflict therewith, established by the New Orleans Cotton Exchange.

Signed.....

The "Cotton Futures Act"[1] of August 18, 1914, regulates the form of the cotton futures dealt in on American cotton exchanges by providing that a tax of two cents per pound of cotton must be paid unless actual delivery is made or unless the contract conforms to the following specified conditions:[2]

(a) It must be in writing plainly stating the terms of such contract and must conform to the rules and regulations made pursuant to the act.

(b) Names and addresses of the seller and buyer must be specified.

(c) It must be signed by the party to be charged or by his agent in his behalf.

(d) It must specify the quantity of the cotton involved in bales or in pounds.

(e) It must specify the basis grade for the cotton involved in the contract, which shall be one of the grades for which standards are established by the Secretary of Agriculture, except grades prohibited from being delivered. Middling shall be deemed the basis grade incorporated into the contract if no other basis grade be specified in the contract.

(f) It must set out the price per pound at which the cotton of such basis grade is contracted to be bought or sold.

(g) It must state the date when the purchase or sale was

[1] *See* Appendix A, Sections 3, 4, 5, 10.

[2] As analyzed in *New York Journal of Commerce*, Feb. 18, 1915.

made and the month or months in which the contract is to be fulfilled or settled.

(h) It must provide that the cotton dealt with therein or delivered thereunder shall be of or within the grades for which standards are established by the Secretary of Agriculture, except grades prohibited from being delivered on a contract.

(i) It must provide that in case cotton of grade other than the basis grade be tendered or delivered in settlement, the differences above or below the contract price which the receiver shall pay for such grades other than the basis grade shall be the actual commercial differences, determined as prescribed by the act.

(j) It must provide that cotton of the following descriptions shall not be delivered on, under, or in settlement of the contract:

1. Cotton that because of the presence of extraneous matter of any character or irregularities or defects is reduced in value below that of good ordinary.
2. Cotton that is below the grade of good ordinary.
3. If tinged, cotton that is below the grade of low middling; or, if stained, cotton that is below the grade of middling.
4. Cotton that is less than seven-eighths of an inch in length of staple, or cotton of perished or immature staple.
5. Cotton that is "gin cut" or reginned, or cotton that is "repacked," or "false packed," or "mixed packed," or "water packed."

(k) It must provide that all tenders of cotton shall be the full number of bales involved therein. (Such variations of the number of bales may be permitted as is necessary to bring the total weight of the cotton tendered within the provisions of the contract as to weight, and necessary variations in the weight of the cotton tendered may be permitted, not to exceed 1 per cent. of the total weight specified in the contract.)

(l) It must provide that on the fifth business day prior to delivery the person making the tender shall give to the person receiving the same written notice of the date of delivery, and that on or prior to the date so fixed for delivery, and in advance of final settlement, the person making the tender shall furnish to the person receiving the same a written notice or certificate stating the grade of each individual bale to be delivered and identifying each bale with its grade by means of marks or numbers.

(m) It must provide that, in case a dispute arises between the person making the tender and the person receiving the same as to the quality, or the grade, or the length of staple, of any cotton tendered under the contract, either party may refer the question to the Secretary of Agriculture for determination, and that such dispute shall be referred and determined, and the costs thereof fixed, assessed, collected, and paid in such manner and in accordance with such rules and regulations as may be prescribed by the Secretary of Agriculture.

The contracts and rules of the New York and New Orleans exchanges have been changed in an endeavor to conform to the requirements of the statute. Persons in the United States are, however, in practice usually prohibited from dealing in futures on the Liverpool or other foreign cotton exchanges, because the act similarly applies the two-cent tax to foreign contracts unless they conform to certain conditions prescribed in the act, or actual delivery of cotton is made. Section 11, to which foreign exchanges have not thus far seen fit to conform, is as follows:

Sec. 11. That upon each order transmitted, or directed or authorized to be transmitted, by any person within the United States for the making of any contract of sale of cotton grown in the United States for future delivery in cases in which the contract of sale is or is to be made at, on, or in any exchange, board of trade or similar institution or place of business in any foreign country, there is hereby levied an excise tax at the rate of 2 cents for each pound of the cotton so ordered to be bought or sold under such contract: PROVIDED, That no tax shall be levied under this Act on any such order if the contract made in pursuance thereof comply either with the conditions specified in the first, second, third, fourth, fifth, and sixth subdivisions of section five, or with all the conditions specified in section ten of this act, except that the quantity of the cotton involved in the contract may be expressed therein in terms of kilograms instead of pounds.

The official future wheat contract of the New York Produce Exchange is as follows:

New York, ....., 19....

In consideration of one dollar in hand paid, the receipt of which is hereby acknowledged ..... have this day sold to ..... or bought of ..... bushels of Contract Wheat, which shall be either No. 2 Red Winter Wheat, No. 2 Hard Winter Wheat, No. 1 Northern Spring Wheat, No. 1 Hard Spring Wheat, or (at a discount of two cents per bushel from contract price) No. 2 White Winter Wheat, or (at a discount of five cents per bushel from contract price) No. 3 Red Winter Wheat, No. 3 Hard Winter Wheat, or No. 2 Northern Spring Wheat, New York Inspection, at ..... cents per bushel of 60 lbs., deliverable at seller's (or buyer's) option ..... 19

This contract is made in view of, and in all respects subject to, the By-Laws and Rules established by the New York Produce Exchange, in force at this date.

Signed .....

The future contracts which are regularly dealt in on the speculative exchanges, are sold by months of delivery and future prices are regularly quoted. Thus a statement that "May wheat" sells at $1.00 per bushel means that future contracts calling for delivery in May are selling at that price, the delivery to be made at any time between the first and last days of May. The standard unit for speculative grain transactions is 5,000 bushels, and when a broker desires to trade in larger amounts he offers or bids for "10," "20," "50," "100," or other quantity, meaning 10,000 or 20,000, etc., bushels. Cotton futures are likewise sold in standard units of "50,000 pounds in about 100 square bales."

**Cotton Futures are Basis Contracts.**—Future contracts as sold on the speculative exchanges are not specific contracts obliging the seller to deliver a particular lot of cotton or bin of grain, or even a particular grade of cotton or grain. They are "basis" contracts. The price of cotton futures is based upon "middling" cotton, but the buyer is not obliged to deliver that particular grade. He may deliver numerous other higher or lower grades, the number of deliverable grades varying on the different exchanges, although those of American exchanges are restricted by the "Cotton Futures Act."

According as he delivers higher or lower grades than "middling" cotton certain additions to or deductions from the contract price are made.

**Cotton Grade Differences.**—Such additions or deductions to the contract price of cotton futures are based upon "grade differences" established in accordance with the rules of the cotton exchanges and the provisions of the "Cotton Futures Act" of August 18, 1914. In New Orleans the so-called "commercial-difference" system has prevailed for many years. Before the Cotton Futures Act was in effect an exchange committee established the difference between middling and each of the other deliverable grades daily by establishing the official spot quotations for the New Orleans market. Grade differences in New Orleans were, therefore, based directly upon the current price at which the various grades of spot cotton were selling in that market. In Liverpool the method of establishing grade differences is similar to that which was employed in New Orleans in that they are also based upon the relative commercial values of spot cotton. Instead of having a committee, however, which meets each day to establish official spot quotations, the Liverpool Exchange provides a panel of eighteen arbitrators, two members of which fix an appraisal or valuation relative to middling whenever any cotton is tendered on a future contract. The New York Cotton Exchange for many years adhered to the so-called "fixed-difference system," an exchange committee fixing the grade differences but once, twice or three times a year. This method sometimes resulted in the arbitrary fixing of differences and between the sessions of the revision committee the grade differences for delivery on future contracts sometimes were not in harmony with the actual value of the various grades of spot cotton. In 1914 the New York Exchange therefore adopted a plan of monthly revision of grade differences, and instructed its revision committee to take into account as nearly as practicable the quotations which they obtained from the southern spot cotton markets.[1] The revised plan which was to have

[1] A. R. Marsh: "The New Rules of the New York Cotton Exchange," *Textile Manufacturers' Journal*, May 2, 1914, pp. 79-83.

become effective in full on December 1, 1914, was adopted largely because of the disturbing effect of the fixed-difference method upon cotton hedging, and because of frequent charges in Congress and elsewhere that the New York market did not fairly reflect the world's price for cotton. Meanwhile, however, the Cotton Futures Act was enacted and caused the New York Cotton Exchange to further revise its methods of establishing grade differences.

Section 6 of this act, effective February 18, 1915, requires all American cotton exchanges to establish their contract grade differences in accordance with the following provisions:

Sec. 6. That for the purposes of section five of this act the differences above or below the contract price which the receiver shall pay for cotton of grades above or below the basis grade in the settlement of a contract of sale for the future delivery of cotton shall be determined by the actual commercial differences in value thereof upon the sixth business day prior to the day fixed, in accordance with the sixth subdivision of section five, for the delivery of cotton on the contract, established by the sale of spot cotton in the market where the future transaction involved occurs and is consummated if such market be a bona fide spot market; and in the event there be no bona fide spot market at or in the place in which such future transaction occurs, then, and in that case, the said differences above or below the contract price which the receiver shall pay for cotton above or below the basis grade shall be determined by the average actual commercial differences in value thereof, upon the sixth business day prior to the day fixed in accordance with the sixth subdivision of section five, for the delivery of cotton on the contract, in the spot markets of not less than five places designated for the purpose from time to time by the Secretary of Agriculture, as such values were established by the sales of spot cotton, in such designated five or more markets: *Provided*, That for the purposes of this section such values in the said spot markets be based upon the standards for grades of cotton established by the Secretary of Agriculture: *And Provided further*, That whenever the value of one grade is to be determined from the sale or sales of spot cotton of another grade or grades, such value shall be fixed in accordance with rules and regulations

which shall be prescribed for the purpose by the Secretary of Agriculture.

The New York Cotton Exchange now settles future contracts in accordance with the particular commercial-difference plan required by law. The New Orleans commercial-difference plan has also been affected, because the United States Secretary of Agriculture has not thus far declared New Orleans to be a "bona fide spot market." Grade differences at New Orleans as well as at New York are now based upon the "average actual commercial differences in value" prevailing in not less than five spot markets designated by the Secretary of Agriculture.[1]

**Grain Futures Are Basis Contracts.**—Future grain contracts are also basis rather than specific contracts, in that they permit the delivery of various grades, although a much smaller number than in case of cotton futures. The standard Chicago wheat contract permits a tender of No. 1 and No. 2 red winter wheat, No. 1 northern spring, No. 1 and No. 2 hard winter and No. 1 velvet chaff wheat. In Minneapolis the contract grade for wheat is No. 1 northern. In Duluth, No. 1 northern spring wheat is the contract grade but No. 2 northern may be tendered at 5 cents per bushel under the contract price. In New York, as is shown in the wheat contract reproduced above (page 145), a larger number of grades are deliverable because the quantity of available wheat is smaller. The practice in the various markets depends largely upon the varieties, grades and total quantity of wheat which they handle. Contract grades are similarly established for delivery of corn, oats, and flaxseed futures. Certain grades are commonly deliverable at the contract prices, and various others at a premium or discount of from ½ to 5 cents per bushel.

[1] The Secretary of Agriculture on Feb. 10, 1915, declared the following markets to be bona fide spot markets: Augusta (Ga.), Boston, Charleston, Dallas, Fall River, Galveston, Houston, Little Rock, Memphis, Mobile, Montgomery, Norfolk, Savannah, and Waco.

The following are designated as spot markets for the purpose of determining grade differences: Augusta (Ga.), Boston, Dallas, Fall River, Houston, Little Rock, Memphis, Montgomery, Norfolk and Savannah.

Neither cotton nor grain futures are specific as to the time of delivery, the seller having the option of delivering on any day of the contract month.

**Short Selling.**—An additional feature of future contracts is that the seller may or may not have the cotton, grain or other product in his possession at the time of sale. Persons selling contracts before they have the product on hand are in the language of the trade "selling short"—they are relying on their ability to obtain the required cotton or grain before the maturity of their contracts.

**Manner of Delivery.**—In the primary grain exchanges deliveries on future contracts are commonly made by the tender of negotiable warehouse receipts issued by "regular" [1] warehouses or elevators, only the officially graded grain in such warehouses or elevators being acceptable. In some markets, as in New York, however, "railroad elevator receipts," [2] "railroad guaranteed certificates," and certificates of grain afloat may also be tendered. Deliveries on cotton futures are made by the tender of negotiable press or warehouse receipts accompanied by official inspection certificates.[3]

The actual warehouse receipts or other evidence of grain or cotton are not, however, passed from hand to hand each time a contract is sold. To avoid this the seller is permitted to issue a so-called "delivery" or "transferable" notice in which he notifies the buyer that he stands ready to deliver certain receipts in fulfillment of the contract. The receipts are tendered only when a contract is closed out by a delivery of the actual cotton or grain which it represents.

Though future contracts call for the delivery of specified quantities of produce, their settlement does not necessarily result in such delivery. The rules of the Chicago Board of Trade, for example, specify that:

In case it shall appear that the delivery of any outstanding trade or contract between members of the Association may be

[1] *See* chap. iv, p. 75.
[2] *Ibid.*, p. 81.
[3] *See* chap. xiii, p. 284.

*offset* by some other corresponding trade or contract, made by the parties with other members of the Association, and the parties to such trade or contract, or their authorized agents, consent to such offset, such trade or contract shall be *deemed to have been settled* and any balance between the current market value of the property covered by such trade or contract, and the several contract prices shall be due and payable immediately by the party from whom such balance may be due to the party entitled to receive the same under his contract.

Thus two contracts which agree in all particulars except price may offset each other and be settled by a payment of the price difference. Contracts may in this way be closed out by direct settlement between the parties concerned, or so-called "rings" may be formed whereby the future transactions of many exchange members may be offset and balances adjusted.

**Legality and Binding Nature of Futures.**—Whether or not actual deliveries of produce are made on all future contracts, such contracts are binding and in every case represent actual grain, cotton or other property.

The seller of such a contract is absolutely liable for the delivery, and if called upon for such delivery by the buyer he can in no way avoid compliance with the terms of his contract except under unusual conditions especially provided for. . . . When the time for making delivery has expired he cannot sell out his contract. This fact and the fact that any buyer, from the first to the last, can if he chooses hold his contract and compel the seller to deliver actual cotton (grain, etc., as the case may be) when the date of maturity arrives, give trading in futures a character entirely different in principle at least, from that of a mere wager or bet.[1]

Though futures are unfortunately sometimes bought or sold in a spirit of gambling, the contracts nevertheless represent actual farm products. In the absence of prohibitive statutes and of proof that both buyer and seller of a future contract understand it to be a wager upon which no delivery

[1] Bureau of Corporations: Cotton Exchanges, Part I, p. 43.

will be made, the legality and binding nature of such a contract is upheld by the courts.[1]

**Bucket Shops.**—Brokerage firms dealing in futures should not be confused with "bucket shops" the transactions of which in no way concern either the spot or future cotton and grain trades. The so-called "purchases" or "sales" which are made in bucket shops are not real purchases or sales but mere wagers or bets upon the future prices of specified commodities. Bucket shops are not only illegal as gambling institutions but are in most states prohibited by specific anti-bucket-shop statutes.

**Options.**—Future contracts should likewise be distinguished from "options" which are merely privileges entitling the buyer, in return for a consideration or forfeit, either to compel the seller to deliver or to receive a specified amount of produce at a fixed price and within a prescribed time. An option entitling the buyer to deliver a certain amount of produce is known as a "put"; one entitling him to call upon the seller for such produce is a "call"; and an option which entitles the buyer either to deliver or receive is a "straddle." Options differ from future contracts in that they do not require delivery unless the buyer chooses to exercise his privilege to put or call. They serve as a means of limiting losses in produce transactions, but have so frequently been used as mere betting devices that in most states they are prohibited alike by state statute and exchange regulations.

## Functions of Speculative Exchanges in the Sale of Spot Produce

One of the direct functions of the speculative exchanges is that they facilitate and supervise speculation in produce and oblige those who desire to speculate to do so in accordance with prescribed rules and principles of justice and equity. The speculative exchanges, however, perform important func-

[1] Irwin *vs.* Williar, 110 U. S. 499, 507; C. Parker: "Governmental Regulation of Speculation." *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 150.

tions in the sale of spot or cash grain, cotton or other produce, and it is because of these functions that they are important links in the organization of American commerce.

**1. Speculative Exchanges as Spot Markets.**—The speculative exchanges are not merely markets for dealing in futures but, with few exceptions, are great spot or cash produce markets. This is particularly the case in the grain trade. The greatest grain exchanges of the United States are located in the primary grain centers of the interior and in the seaboard grain markets, and as was previously stated,[1] the bulk of the grain handled at these markets is bought and sold on the exchanges in accordance with exchange regulations. While the Chicago Board of Trade is the greatest speculative grain market in the world it is also the greatest cash grain market, and the Minneapolis, St. Louis, Duluth, Kansas City and New York exchanges are likewise important spot as well as speculative markets. Indeed, on many of the primary and seaboard grain exchanges the sale of spot grain is of greater importance than the sale of futures.

The grain exchanges establish uniformity in customs and usages, promote equitable trade principles, regulate inspection, grading, weighing, elevators, warehouse receipts, and storage charges and commissions, promulgate rules for delivery, and in other ways provide an organized market where cash grain may be bought and sold in an orderly manner. As was previously explained their spot grain regulations depend somewhat upon the extent to which the states undertake to regulate the grain trade.[2]

Most of the speculative cotton exchanges, likewise, are important spot markets. The New Orleans Exchange is one of the largest spot cotton markets in the cotton belt, the Liverpool Exchange is the largest in Great Britain, and the Havre Exchange is the largest in France.

While in recent years from 100,000 to 600,000 bales of spot cotton have been annually sold on the New York Cotton Exchange, it is the only great speculative produce exchange

[1] *See* chap. iv, pp. 84, 87.
[2] *Ibid.*, p. 77.

in the United States which is not a broad spot market. The annual spot sales which in the early seventies exceeded 500,000 bales or over 15 per cent. of the crop at times fell to less than 100,000 bales or about 1 per cent. during the nineties.[1] In the crop year 1910-1911 the spot sales were reported at 404,000 bales and in the following year at 219,000 bales, or 3.3 and 1.4 respectively [2] of the season's crop. The principal reasons for the relative decline of the spot business are that New York is not a convenient cotton-export point, that the rail rates to and from the South to New England have been so readjusted that it is less expensive to ship cotton direct to the mills than to reship it from New York, and that the southern planters and dealers are financially less dependent upon New York bankers than in the past. A portion of the cotton supply of New York, moreover, has consisted of so-called "overs" or surplus grades of cotton for which the southern spot buyers have no immediate outlet, and this has deterred spinners from purchasing spot cotton there. Spinners likewise contend that they have not been able to buy New York futures with a view to requiring actual delivery of cotton because the contracts permit the delivery of a wide range of grades including the surplus grades for which the spinning demand is small.[3] The restrictions placed upon the grades deliverable on contracts by the "Cotton Futures Act" will probably exert an influence upon the quality and quantity of cotton handled in the New York market in the future.

**2. Speculative Exchanges Provide a Continuous Market.**—It is largely because of the great exchanges where there is a continuous market in which large quantities are readily bought and sold at a moment's notice, that dealers are willing to purchase enormous supplies of grain and cotton during the harvesting seasons. By providing a continuous market, the

[1] U. S. Bureau of Corporations: Cotton Exchanges Part I, pp. 248-249.

[2] New York Cotton Exchange: Annual Report of Cotton Crop (1910-1911 and 1911-1912).

[3] M. T. Copeland: The Cotton Manufacturing Industry, p. 186.

exchanges and the use of negotiable warehouse receipts give to produce the *quality of mobility*.[1]

The existence of a continuous market also facilitates the *financing of the grain and cotton crops*. Were it not for the ability to hedge and the knowledge that grain and cotton always have a ready market on the exchanges, bankers would be less ready to provide buyers with the necessary loans, and commissionmen and merchants would be more cautious in the making of advances or loans to local buyers and producers. The *ability to hedge*, moreover, is absolutely dependent upon the existence of a continuous market. The presence of a group of speculators facilitates the maintenance of a continuous market, for some of them, with a view to making a future profit, are always willing to accept any quantity offered in the market.

**3. Speculative Exchanges Collect and Disseminate Trade Information.**—The great exchanges act as "clearing houses of information." [2] Not only do the exchanges as such collect and publish information and post it on bulletins, but the knowledge of their individual members as to crop conditions and movements, weather conditions, changes in transportation charges, federal and state legislation, competition, coöperation and the remaining forces affecting the supply of and demand for produce,[3] is currently given "expression in the form of purchases and sales at prices which are immediately transmitted by wire to all the trade centers, and soon made available to the general public by the daily press." [4]

**4. Speculative Exchanges Tend to Establish World Prices.**—By providing a continuous market, disseminating trade information, and providing an organized market where future conditions may be systematically discounted, the speculative

[1] S. S. Huebner: "The Functions of Produce Exchanges," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 11.

[2] *Ibid.*, p. 16.

[3] *See* chap. xvii, pp. 350-354.

[4] S. S. Huebner: "The Functions of Produce Exchanges," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 16.

exchanges do much to establish world prices for cotton and nearly all the leading cereals. It is on these exchanges that large numbers of buyers and sellers regularly register their knowledge of the present and their judgment of the future each time they buy or sell. The telegraph and ticker service has so connected the various grain exchanges that they are practically a single vast market. Allowing for differences in transportation and shipping costs and in some cases import tariffs, the grain prices paid at most of the great exchange markets throughout the world are in the long run substantially uniform; because the many arbitrageurs who buy and sell at any of the exchange markets with a view to making a profit out of temporary price differences cause the various exchanges to seek a common level.[1] Wide differences occur only temporarily. In the same way there is normally a world's market and price for cotton.

The prices paid in the exchange markets affect not only the exchange transactions, but as previously stated the prices received by the growers of cotton and grain, and those paid by millers, malsters, cereal manufacturers, spinners and weavers are usually based directly upon the current price quotations of the primary market in which the grain is bought or sold or of the cotton exchange in which the cotton is hedged.

**5. Future Contracts as a Means of Insuring Trade Profits.**—It is not only by furnishing a continuous market where grain or cotton may be bought or sold at any time that the exchanges afford protection to producers, dealers, bankers and manufacturers. The future contracts which are bought and sold on the exchange serve as a means of insuring against the loss of trade profits resulting from fluctuations in the prices of spot produce.

The most *direct use of futures* for this purpose occurs when producers, dealers, merchants, exporters or other sellers of grain or cotton sell contracts with a view to actually delivering the grain or cotton at the agreed price, and when millers, spinners or other buyers of produce purchase futures for the purpose of requiring such deliveries during given months

[1] *See* chap. iv, p. 56.

throughout the year. Grain futures are, however, not generally used in this way and cotton futures seldom, because they are not specific as to the grade which will be delivered or the day of the month when deliveries will be made.

Futures are more commonly used as a means of *hedging spot transactions.* Any dealer or shipper with grain or cotton on hand for which no immediate orders are received may hedge by selling future contracts on the speculative exchanges. Perhaps the simplest illustration is that of a primary market grain dealer who has a quantity of grain in store which he eventually hopes to ship to the seaboard and by so doing make a small trade profit. Assuming that in August a Chicago dealer has bought 100,000 bushels of wheat for 90 cents a bushel, it is obviously important in the absence of insurance, that prices should not decline before he finds his eastern buyer. In order to protect himself against this possibility he may immediately sell a future contract on the exchange for delivery in some future month, say in September. He now is party to two distinct transactions—a spot and a future transaction—for it is not his intention to deliver his grain on the future contract which he has sold. If by the time he finds his eastern buyer the price of wheat in Chicago has declined to 80 cents it is obvious that he has lost 10 cents per bushel on the grain which he has in store. In that event, however, the price of futures will also have declined 10 cents, for spot and future grain prices normally fluctuate together, and he is therefore able to close out or cover his short sale by buying a future at a profit of 10 cents a bushel. The loss on his spot grain and the profit on his future transaction, therefore, counterbalance each other and on the basis of Chicago prices he has neither a loss nor a profit. Spot prices in the seaboard markets, however, are normally higher than those at Chicago or other primary markets by an amount sufficient to cover shipping and handling costs and yield a trade profit. When the price of his grain in Chicago has declined to 80 cents, he will therefore be able to sell in New York at say 88, which will enable him to pay shipping and handling costs and make the small trade profit which he originally desired. Had

he price of grain risen instead of declined his hedge would ave deprived him of a speculative gain, but would have simlarly insured his trade profit.

In the same way country grain dealers, line elevator companies, seaboard grain dealers, grain exporters, local cotton nerchants, cotton exporters and brokers or other grain and otton dealers in many cases hedge grain or cotton which they ave bought so as to insure their trade profits. Hedging is ometimes more complicated than the simple illustration here iven; for cotton, for example, may be bought in the interior f the South, hedged on the New York or New Orleans exhanges, and ultimately sold in Liverpool or New England, ut the principle is the same.

Grain and cotton dealers of all kinds may also hedge grain r cotton which they have privately contracted to deliver at fixed price, but which they do not at the time possess. Thus it may be assumed that in August the Chicago grain lealer, mentioned above, privately contracts to deliver to a New York miller in September 100,000 bushels of a particular grade of wheat at 90 cents a bushel, but that he does not ossess this wheat at the time he accepts the contract. He grees to deliver at 90 cents because that price will enable him o make a trade profit and because it bears the correct relaion to the price at which he can buy September futures.[1] He herefore immediately buys a September future for the same uantity of wheat at say 82 cents per bushel. Assuming that he price of wheat rises and that he buys the 100,000 bushels of ash wheat in Chicago for 92 cents, it is obvious that he has lost cents as a result of the fluctuation in the price of spot wheat. The future which he bought would normally, however, also ave risen to 92 cents, and he could sell it at a profit of 10 ents per bushel. He would now be able to deliver the 100,000 bushels profitably at 90 cents a bushel, because the 8 cents et difference between his loss on the spot transaction and rofit on the future transaction is adequate to cover shipping nd handling costs and yield a small trade profit.

[1] 90 cents = 82 cents in Chicago plus say 8 cents to cover shipping nd handling costs and a trade profit.

Spinners or millers who have bought a supply of cotton o grain without having contracted to sell their yarn or flou may similarly hedge by selling a corresponding quantity o future contracts. If they have contracted to deliver certai quantities of yarn or flour before buying the required amoun of cotton or grain they may hedge by purchasing future con tracts. Textile manufacturers, millers, wholesale merchant or others who have on hand a large stock of unsold finishe cotton or grain products may if they desire hedge by sellin cotton or grain futures in proportion to the amount of cotto or grain required to make a given quantity of the finishe products. They may in this way avoid loss on their stock o goods to some extent because the prices of the finished prod ucts are in a large measure based upon the price of the ra materials.[1] Since this price relation is not at all times definit and exact the hedging system is less commonly used than i the purchase and sale of raw cotton and grain.

The amount of grain and cotton hedging on the part o millers and spinners varies in different places. Large flou millers in the United States regularly hedge their grain an flour transactions. American cotton spinners hedge less fre quently; the practice is still less common among Continenta European spinners who carry somewhat smaller stocks of ra cotton and are further removed from the large speculative ex changes; and there is relatively little hedging on the part o British spinners who usually require the cotton merchants t hold all but a small part of the raw cotton supply. Th greatest amount of hedging is done by the merchants, dealer exporters and other grain and cotton middlemen who stan between the farmers and the manufacturers, and who desir to make a trade profit by distributing the crops.

The aggregate volume of hedging transactions is enor mous, for a given quantity of grain and cotton may be var ously hedged by the local buyer, central dealer, exporte manufacturer and any other grain and cotton concerns. I

[1] *See* Report of Committee of American Cotton Manufacturers Association on Cotton Exchanges, *Textile Manufacturers' Journa* May 2, 1914, p. 87.

may also be hedged repeatedly by a single owner, for hedges may be shifted from month to month until the spot grain or cotton is eventually disposed of. Hedging is perhaps the principal trade function of the speculative exchanges. Strangely enough it enables those grain and cotton concerns that wish to avoid the danger of speculation to protect their trade profits by entering the speculative market.

Hedging does not always afford complete insurance of trade profits, for prices of spot produce and futures do not always fluctuate in exact relation to each other. In the grain trade the difficulty of attaining substantially exact hedges has been small. In the cotton trade, however, the relation between spot and future prices has at various times broken down. Owing to the seller's right to deliver numerous grades of cotton including low grades, cotton futures have normally sold at a discount. The merchant or spinner can make due allowance for this normal discount, but when at times, especially in New York, the cotton futures have sold abnormally low because of inaccurate grade differences or other reasons, the hedge has not afforded complete protection. The exactness of hedging may also at times be destroyed by undue manipulation or the cornering of futures maturing in particular months.

Various provisions of the "Cotton Futures Act" affect cotton hedging: (1) The two cent per pound tax payable in case a person in the United States buys or sells a future contract on a foreign exchange not complying with the conditions imposed by the act prevents American cotton exporters from hedging on the Liverpool exchange. (2) The restrictions applicable to future contracts made on American exchanges, especially those debarring the delivery of low-grade or mixed packed cotton or cotton that is less than seven-eighths of an inch in length of staple, has caused some uncertainty as to the relation between the price of futures and of spot cotton. Whether or not this uncertainty will be a permanent one cannot at present (May, 1915) be foretold. Thus far, however, the act has confined hedging on the part of American cotton dealers or merchants to American ex-

changes and has tended to restrict somewhat the total amount of cotton hedging.

### Effect of Speculation on Spot Prices

There are widely varying views as to the effect of speculation upon the price of spot produce. Cotton and grain growers not infrequently contend that it depresses the prices which they receive. This view is based mainly on the belief that as spot and future prices largely fluctuate in harmony, the sale of futures has the same effect as a large increase in the supply of grain or cotton. The sale of futures, whether as a short sale or otherwise, does not, however, have such a depressing effect. In the first place every short sale means also a purchase at the time and "consequently against the depressing influence of the short sale there is the uplifting influence of the purchase, and the effect of the transaction on prices is determined by the relative character of the buying and selling and not by the mere fact that a sale has been made."[1] Second, every future is a valid and binding contract. Every short sale, therefore, before or at the time when the contract matures, requires a purchase either of grain or cotton or of another future to offset the one that was sold. Third, "this popular misconception of short selling overlooks the extremely important fact that influential speculators seldom undertake deliberately to contest natural conditions at least for any length of time. Instead they frequently spend large sums of money in securing all possible information which may tend to influence prices. Instead of fighting natural conditions, the ordinary speculator is eager to ascertain correctly what the natural conditions are and what their probable influence will be, and then to shape his campaign in the market in accord with such information."[2] Fourth, as was pointed out in a previous chapter, when futures sell at an abnormal discount, as they sometimes do in the cotton

[1] U. S. Bureau of Corporations: Cotton Exchanges, Part IV, p. 276.

[2] *Ibid.*

trade, the spot prices of the large markets refuse to follow the price of futures and the cotton buyers are economically compelled to readjust the limits which determine the growers' prices.[1] Fifth, statistics as well as common trade knowledge indicate that in the years when the volume of future sales is greatest spot prices are usually higher than when speculation is at low ebb.[2]

Sixth, the present effect of speculation upon farmers' prices is not to be judged by comparison with assumed prices such as might be paid if all the abuses of speculation were abolished and all its advantages were retained, but by comparison with the prices which would probably be paid if there were no speculation whatever. The widespread use of the future markets for hedging purposes makes it clear that if the selling of futures were everywhere abolished, grain and cotton buyers would endeavor to protect their trade profits by paying the farmers relatively lower prices.

While there are farmers who believe that speculation depresses spot prices, so there are some flour millers and cotton spinners who are equally positive that it has the opposite effect. They usually have in mind the "corners" which sometimes occur in the speculative markets. A *speculative corner* occurs when the outstanding futures maturing in a particular month are bought up by a group of operators who suddenly threaten to require delivery. It is only a temporary "squeeze" which lasts until the operators who sold short for delivery in that month settle at a much advanced price. It is an evil mainly because of its disturbing effect upon outstanding hedges. The speculative corner should not be confused with an actual corner of spot grain or cotton. Such a corner would have far-reaching effects, but the grain and cotton crops of the United States and of the world have become so vast there is little likelihood of such a calamity.

While the sale of futures usually tends to maintain grow-

[1] Chap. v, p. 114.

[2] For cotton price statistics *see* Bureau of Corporations: Cotton Exchanges, Part IV, pp. 272-275. For grain price statistics *see* U. S. Industrial Commission Report, Vol. vi, pp. 192-195.

ers' prices because of their use for hedging purposes, it does not follow that the spot prices paid by flour millers and cotton spinners are thereby advanced beyond the level warranted by natural conditions of supply and demand. As stated by the United States Bureau of Corporations in connection with cotton prices, "regardless of just how the benefit is divided as between producer and spinner, it is certain that the hedging function, under a properly conducted system, tends, within narrow limits, to increase the price of cotton to the producer without advancing the price to the spinner." [1]

Speculation affects central market prices in that it tends to establish a proper price level earlier than it would otherwise be established. It moreover tends to steady spot prices. This steadying effect is not to be confused with the fact that future prices have in recent years fluctuated more violently and more frequently than spot prices. Spot prices are steadied by speculation in that without the tendency of the exchanges to constantly discount future conditions and their unusual efforts to obtain accurate trade information, they would break much more sharply between the harvesting seasons. The speculative exchanges likewise, as was previously pointed out, facilitate the establishment and maintenance of a world's price for cotton and the leading cereals.

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## CHAPTER VIII

### THE LOCAL MARKET FOR LIVESTOCK

The livestock trade of the United States has reference, largely, to the trade in beef cattle, hogs and sheep. Dairy cattle are the basis of the country's highly important dairy industries, and the value of horses, etc., for draft purposes is unquestioned; but neither in dairy cattle as such nor in horses is there the systematically conducted trade that is carried on in meat-producing animals.

The trade in beef cattle, hogs and sheep will serve to illustrate an agricultural industry in which there is no systematic exchange speculation, in which the growers instead of selling locally ship much of their output direct to large central markets, and in which the central or primary markets serve somewhat different purposes than those of the grain and cotton trades.

#### Geographical Classification of Livestock Trade

**The Cattle-growing Districts.**—The United States Department of Agriculture estimates that the total number of cattle, other than dairy cows, on the farms of the United States has declined from a maximum of over 51,500,000 on January 1, 1907, to 35,855,000 on January 1, 1914, and 37,067,000 on January 1, 1915. The returns of the Census Office differ from these, but likewise show a decline from 50,584,000 on June 1, 1900, to 41,178,000 on April 15, 1910. There are in addition some 21,000,000 dairy cows. The total number of cattle varies considerably at different times of the year, the number on July first being about 14 per cent. larger than on

February first,[1] and this variation explains a part of the difference between the census returns and those of the Department of Agriculture. It also shows that the decline in the number of cattle during the decade 1900 to 1910, as reported by the Census Office, is somewhat exaggerated because their number is normally about 4 per cent. larger in the United States on June first than on April fifteenth.

The largest numbers of beef cattle are raised in Texas, Iowa, Nebraska, Kansas, California, Missouri, Illinois, Oklahoma, Minnesota, Wisconsin, Colorado, South Dakota and New Mexico. Although cattle are raised throughout the entire country, the great beef-producing states are those of the Mississippi Valley and the Far West.

They may be divided into three main areas: (1) the northwestern grazing grounds, or northern half of the Great Plains including the eastern foothills and many of the plateaus and valleys of the Rocky Mountains. In this area, comprising large parts of North and South Dakota, Minnesota, western Nebraska, Colorado, Montana and Wyoming, the so-called "western" grass-fed cattle are grown. (2) The southwestern grazing grounds, comprising parts of Texas, Oklahoma, Arkansas, New Mexico and Arizona. The cattle raised in this area are commonly known as "Texas range" cattle. (3) The feeding grounds, including parts of Iowa, Kansas, eastern Nebraska, Missouri and Illinois. The number of beef cattle in this area exceeds that in any other cattle-growing district, for not only do the growers raise much native stock, but large numbers of Western and Texas range cattle are shipped to the feeding grounds to be fattened on corn and to a smaller extent on cottonseed meal, distillery products and the coarse grains. Some of the stock feeders are corn growers who prefer to market their crop in this way, while others are professional feeders who make a business of buying the grass-fed cattle and the necessary food and of selling the fattened animals at prices sufficiently high to cover all costs and yield a profit.

[1] U. S. Bureau of Statistics (Department of Agriculture), *The Agricultural Outlook*, Apr. 23, 1914, p. 9.

MAP VII.—BEEF CATTLE DISTRICTS AND CENTRAL LIVESTOCK MARKETS.

Dots showing number as in Thirteenth Census of U. S.

As shown in Map No. VII many beef cattle are grown in the Pacific slope, in the North Atlantic states and throughout the South, but the cattle trade in these regions is mainly a local trade. The populous regions of most of the eastern and southern states are compelled to draw upon the three principal cattle-raising areas for much of their beef supply.

**The Hog-raising Area.**—The number of hogs in the United States has according to census returns also declined from 62,868,000 on June 1, 1900, to 58,186,000 on April 15, 1910, a loss which is counterbalanced by the fact that the number is normally about 18 per cent. larger on June first than on April fifteenth. The Department of Agriculture estimates that the number of hogs on the farms of the United States on January 1, 1901, was 56,982,000, on January 1, 1914, 58,933,000, and on January 1, 1915, 64,618,000. Between March first and October first there is a seasonal variation of about 47 per cent. Iowa, Illinois, Missouri, Indiana, Ohio, Nebraska, Texas, Wisconsin, and Arkansas are the great hog-growing states of the country. Many are raised in the South and in the vicinity of the large North Atlantic cities, but the hog-growing area is largely confined to the corn belt. The country's corn crop is used mainly to feed hogs, cattle, sheep and other livestock, and the feeding is done largely within or adjacent to the corn belt.[1]

**The Sheep-growing Districts.**—The flocks from which the country obtains its supply of mutton and lamb are raised mainly in four districts. (1) The northwestern Rocky Mountain foothills and northern and central mountain states which are particularly important as the mutton-producing part of the western sheep ranges. Montana and Wyoming are the greatest sheep growers in the United States, and large numbers are also raised in eastern Idaho, Colorado and Utah. (2) The southwestern Rocky Mountain foothills and plains, including New Mexico, Texas and Arizona. (3) The Pacific Coast states,—chiefly Oregon, California, and western Idaho, and (4) the central Mississippi and Ohio River valleys, in-

[1] *See* map No. iv, p. 33.

cluding Ohio, Michigan, Missouri, Indiana, Iowa, Kentucky and Illinois. (*See* Map No. VIII.)

The entire sheep flock of the United States as reported by the Census Office comprised 55,363,000 on April fifteenth, 1910, as compared with 63,374,000 on June 1, 1900. Since there is a normal variation of about 20 per cent. between April fifteenth and June first, it is seen that the number during the decade remained about stationary. From January 1, 1911, to January 1, 1915, however, the estimates of the Department of Agriculture show a decline from 53,633,000 to 49,956,000. Between February first and June first of each year there is a seasonal variation of nearly 41 per cent. in the total number of sheep on the farms of the United States.

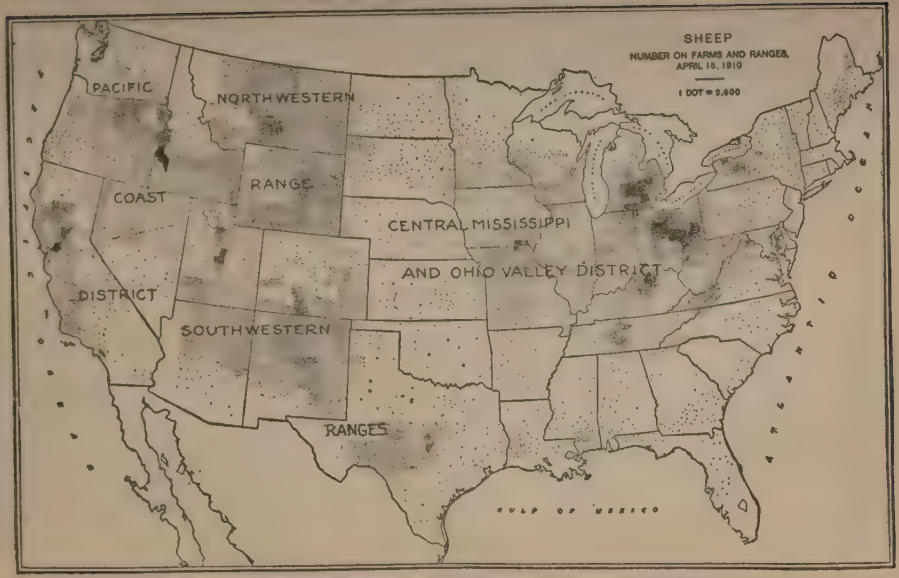
Nearly 60 per cent. of all the sheep in the United States are raised in the first three districts. It is here that the operation of large sheep ranges and ranches constitutes one of the main industries. The majority of the sheep are grazed in large flocks on open Government ranges, on national forest lands, on privately leased lands or on lands which the individual sheep growers or sheep corporations have purchased. Some sheep are raised on inclosed or fenced-in ranges and ranches but they are more commonly handled under the herding system. During the summer they are in many cases driven or shipped to the mountain ranges to graze on native grasses and forage plants better adapted to sheep than to cattle grazing, and in the winter months those which have not been sold are moved to lower and more sheltered ranges where grazing and feeding maintains them until spring.

A portion of the sheep found in the Central West are western range-born sheep and lambs, which as in the case of western cattle are taken there to be fed for the market.[1] The practice is less common than in the cattle industry, but there are numerous corn growers and feeders who make a business of purchasing western as well as native lambs to feed and eventually sell at a profit.

**General Magnitude of Livestock Industries.**—The mag-

[1] U. S. Tariff Board: Wool and Manufactures of Wool, vol. i, p. 550.

MAP VIII.—SHEEP-GROWING DISTRICTS.




Dots showing number as in Thirteenth Census of U. S.

nitude of the meat-producing livestock industries of the United States is seen in that the estimated farm value of the country's cattle (other than dairy cows) on January 1, 1915, was $1,237,376,000, of hogs $637,479,000, and of sheep $224,687,000. The hog-raising industry of the United States exceeds that of any other country in the world; the number of cattle is exceeded only in British India; and the number of sheep only in Australia and Argentine Republic.

**Volume of Annual Livestock Trade.**—While the number and value of the food animals in the United States indicate the source of the country's meat supply, only a portion of them are annually sold in the market or slaughtered. The returns of the Census Office show that the per cent. of total slaughter to total stock on hand on January 1, 1909, in the case of hogs was about 81.2 per cent., cattle 30.8 per cent., cattle other than dairy cows 41 per cent., and sheep 28.1 per cent. They indicate that in 1909 the total output of stock including home consumption and exports comprised 20,368,000 cattle, 52,015,000 hogs, and 14,620,000 sheep. If the number slaughtered on the farms is deducted, it is seen that 17,828,000 cattle (including calves), 36,636,000 hogs and 14,091,000 sheep reached the livestock markets of the United States for slaughtering and exporting purposes.[1] A portion of those slaughtered on the farms, moreover, are sold by the stock growers in local meat markets. The total cattle sold by growers for all purposes was in 1909 reported as 27,315,000; and in the same year 37,500,000 hogs and 18,991,000 sheep were sold.

### Shipping from Local Points to Central Markets

In contrast with the growers of grain and cotton who usually, though not always, sell their crops locally, the stock growers throughout the central and far-western states usually ship their beef cattle, hogs and sheep to the large central livestock markets. The animals of western ranches and ranges

[1] *See* Thirteenth U. S. Census (1910), vol. x, pp. 343-345; U. S. Bureau of Animal Industry, Annual Report (1914), pp. 253-260.

are driven to local shipping points, loaded into livestock cars and shipped in carload lots to the central stockyards at Chicago, St. Paul, Kansas City, St. Louis, Omaha, St. Joseph, Sioux City and other slaughtering and packing centers.

**Railroad Equipment.**—Livestock is shipped to the central markets in especially constructed stock cars, equipped with stalls or pens, watering troughs and feeding appliances. Hogs and sheep are frequently shipped in double-decked cars. The cars are mainly owned by the carriers, but some are owned by private stock-car companies who lease most of them to the railroads upon receipt of a mileage charge of about .6 of a cent per mile. The private cars, sometimes known as "palace stock-cars," are shipped from one section of the West to another, and tend to supplement the cars provided by the carriers. Some of them are rented to stock owners upon receipt of fixed rentals, but it is mainly the owner of exhibition livestock, race horses, etc., who uses the private cars in this way. The shipper's freight charges are the same whether his stock is shipped to market in private or railroad-owned cars. The carriers frequently make up livestock trains which are given complete right of way over other freight trains and are moved at a speed approaching that of passenger trains.[1]

The railroads are also equipped with stockyards at various points along their lines, where the livestock may be unloaded for rest, food and water. They are required by law to unload the livestock at the end of a specified number of hours.

**Livestock Contract.**—Livestock is not shipped on the usual bills of lading such as are issued for grain, cotton, or other inanimate freight, but on so-called livestock contracts. In order to obtain the regular livestock rates the shipper has usually been obliged, in the past, to agree to a maximum railroad liability not exceeding fixed values per animal, and also to agree "to load and take care of and to feed and water said stock while being transported, whether delayed in transit, or otherwise, and to unload the same," and to absolve the carrier from injuries resulting from "overloading, crowding upon one another, kicking or goring, suffocating, fright, burning of hay

[1] *See* Bureau of Corporations: The Beef Industry, p. 15.

or straw or other material used for feeding or bedding, or b fire from any cause whatever, or by heat, cold or by change in weather, or for delay caused by stress of weather, by ob struction of track, by riots, strikes or stoppage of labor or fo causes beyond their control." Shippers refusing to ship o these terms were required to pay increased freight charges A federal act, effective on June 3, 1915, however, prohibit interstate carriers from fixing limited valuations in the future and the form of their livestock contract will therefore hav to be changed.[1] The caretakers who are carried on the live stock trains free of charge are usually required to releas the carriers from all liability for personal injury by sign ing the "release" contained on the back of the livestock con tract.

**Transportation Charges.**—The railroad rates on cattle an sheep shipped from local points to the central markets com monly vary according to whether the animals are shippe for slaughter, i. e., are "market" or "fat" stock, or whethe they are "stockers" or "feeders" which will be shipped out o the central markets to the feeding grounds to be raised an fattened. The former kind of cattle and sheep are shipped o the so-called "100 per cent. basis," and the latter on the "7 per cent. basis." The original intention of the 25 per cen reduction on stockers and feeders was that such stock woul be shipped direct from the ranges to the feeding grounds, bu when the practice of shipping them to the central market arose it was generally applied. The Interstate Commerc Commission has refused to permit an increase of the 75 pe cent. rates on the grounds that the market value of stocker and feeders is from $1.00 to $3.00 per 100 pounds less tha of fat stock, that they are less subject to claims for shrinkag and delay, and that while market cattle and sheep are fre quently shipped on a rapid schedule, the stockers and feeder are more commonly shipped in regular freight trains.[2] Sinc hogs are usually shipped to the central markets for slaughte the twofold rate basis does not apply to them.

[1] *See* pp. 316, 317.

[2] 23 I. C. C. Reports 7.

The rates on livestock also vary widely according to points of shipment and destination. Usually, however, they are uniform from a given shipping point to the various Missouri River markets, somewhat higher to St. Louis and still higher to Chicago. The rates from Fort Worth to Kansas City and St. Joseph for instance are 33½ cents per 100 pounds, to St. Louis 39½ and to Chicago 45½ cents, and from Denver to Kansas City and Omaha they are 31 cents as compared with a rate of 47 cents to Chicago.[1] In the case of livestock shipments from points in New Mexico, Texas, and Oklahoma to Fort Worth, Oklahoma City, and Wichita, the Interstate Commerce Commission has enforced a mileage scale, under which the rates gradually increase with the length of the haul, but not in exact proportion to distance. While this basis does not apply throughout the West it illustrates the general range of livestock rates. Within the region included in the decision the rates vary from 5½ cents per 100 pounds for a 10-mile haul to 8¾ cents for 50 miles, 17½ cents for 200 miles, 32 cents for 500 miles, 44 cents for 800 miles and 52 cents for 1,000 miles.[2]

The shippers are also required to pay for the feeding of the stock in transit. They commonly buy the food en route and not infrequently from the carriers who provide a supply at the unloading yards. If the carriers do the feeding they have a lien on the livestock for the food provided and the services rendered.

**Public Regulation.**—Nearly all the stock-raising states regulate the transportation of livestock by providing in special statutes that the animals shall be unloaded for food and rest at the end of a given number of hours—usually 28—that stock cars shall be moved at the rate of at least 18 miles per hour on the main line and 12 miles per hour on branch lines, and that free transportation and prescribed caboose facilities shall be provided for necessary livestock attendants. Some states have additional laws providing for telegraphic information as to stock-car movements, preference to livestock in the

[1] 11 I. C. C. Reports 277, 298; 13 I. C. C. Reports 418.
[2] 22 I. C. C. Reports 160.

matter of car distribution, etc., but such statutes are not gen
eral.

The federal government also has enacted a statute whic
requires the unloading of livestock at the end of 28 hours i
shipped in interstate commerce.[1] It moreover authorizes th
Secretary of Agriculture to establish such rules and regula
tions concerning transportation as may from time to tim
seem necessary to prevent the spread of contagious and in
fectious diseases of livestock,[2] and prohibits the shipment o
livestock from quarantined zones except under such rules o
"inspection, disinfection, certification, treatment, handlin
and methods of delivery and shipment as the Secretary ma
promulgate."[3]

### Local Inspection of Livestock

The Bureau of Animal Industry of the United States De
partment of Agriculture not only inspects the interstate an
foreign shipments of livestock at the central and seaboar
markets, but in regions where livestock diseases prevail
inspects the animals at local points of shipment and in transi
Large districts, especially in the southern and southwester
states, are quarantined to prevent the spread of Texas an
other dangerous fevers, disease-carrying ticks, sheep and catt
scabies and cattle mange. Livestock so quarantined may no
be shipped to points outside the quarantined zone withou
local inspection, and in the case of scabies, not without bein
dipped or otherwise treated. Certificates such as are show
in Forms 17 or 18 having been issued for animals not actuall
afflicted, they may be shipped to outside markets, but whe
possible, care is taken that they are not unloaded in pens use
for stock coming from districts which are not quarantine
The original certificate is mailed to the Bureau of Anim
Industry, a copy is attached to the railroad billing accom
panying the shipment and another sent to the inspection of

[1] Act of June 29, 1906.
[2] Act of Feb. 2, 1903.
[3] Act of Mar. 3, 1905.

L. D. Form 40.

No. 21447

**UNITED STATES DEPARTMENT OF AGRICULTURE,**
**BUREAU OF ANIMAL INDUSTRY.**

**ORIGINAL.**
(To be mailed promptly to Chief of Bureau of Animal Industry.)

*Owner* _____ *Consignee* _____ *Place* _____

*Address* _____ *Destination* _____ *Date* _____

There were taken from this lot ..... head of cattle, which reacted to the test.

| No. | Age | Sex | Description | Date: Temperatures Before Injection | | | Date: Time of Injection | Amount of Tuberculin Injected | Date: Temperatures After Injection | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ...M | ...M | ...M | ...M | c c | ...M | ...M | ...M | ...M | ...M | |
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I hereby certify that I have inspected and tested with tuberculin the _____ animals above described, and have found them to be free from tuberculosis or symptoms of contagious, infectious, or communicable disease.

*Car No.* _____ *(Signature)* _____

*Shipped via* _____ *Veterinary Inspector, Bureau of Animal Industry.*

FORM 17

This certificate shall be attached to the railroad billing accompanying the shipment.

No. 472156 — L. D. Form 48.

# U. S. Department of Agriculture,

## BUREAU OF ANIMAL INDUSTRY.

This Certifies that ..... CATTLE

originating in the County of .....

State of ....., and owned by

(Name.) .....

(Address.) .....

Consigned to .....

(Destination.) .....

(Cross out clauses as required.)

have been inspected by me and found FREE from any symptoms of scabies (mange) / Texas fever

have been inspected and found to have been EXPOSED to the contagion of scabies (mange) / Texas fever

have been inspected and found to be INFECTED with scabies (mange) / Texas fever

and have been dipped once / twice in .....

..... on .....

.....

and may be shipped for .....

Shipped via ..... R. R.

Hour loading finished .....

..... Inspector.

(Date.) ....., 19

(Place.) .....

This permit is subject to regulations of State in which animals are destined.

CANCELLED

☞ This certificate is void 10 days after date.

(CAR NUMBERS ON BACK.)

8—155

FORM 18

cials of the state in which the shipment originates. Regions may be similarly quarantined to prevent the spread of hog cholera. Livestock may also be locally inspected and tested with a view to detecting tubercular infection and eradicating the disease, and railroad cars and stockyards may be inspected and disinfected.

Local inspection by the federal government is supplemented by state statutes providing for the inspection by state authorities of sick and suspected animals, the establishing of quarantine zones, the dipping of sheep, and the keeping of railroad cars and stockyards in a sanitary condition. The federal and state authorities sometimes coöperate in the work of checking and stamping out diseases by destroying herds of afflicted animals, regulating the shipment of livestock from quarantined zones, and preventing the shipment of, or use of, diseased animals for food purposes. In case herds afflicted with contagious diseases are condemned, the owner is compensated to the extent of their value as food animals, the federal and state governments usually sharing the expense.

## Methods of Selling Livestock

**Sales Through Central Commissionmen.**—The livestock shipped by western stock growers to the central stockyards is usually sold through commissionmen or brokers. A carload is frequently consigned to a commissionman, the owner intrusting him with the entire care and sale of the animals. The commissionman divides them into lots or "bunches" with a view to obtaining the highest current prices, and sells them to meat packers, wholesale slaughterers, feeders, breeders, stocker, eastern buyers, speculators or traders, and exporters. The selling commissions are regulated by livestock exchanges, the general charge per head being 50 cents for cattle, 25 cents for calves, and 10 to 15 cents for hogs and sheep, with maximum charges per carload ranging from $6 to $12.

At the time of sale the price is fixed in terms of so much per one hundred pounds, the entire amount being determined

after the animals have been weighed by official exchang weighmasters. The owner is obliged to pay the freigh charges from local shipping point to the central market, th cost of feeding his livestock, a yardage charge, and at som places a terminal or transfer charge for switching the car from the railroad to the stockyards. After deducting all such charges and his commission from the amount realized on th sale, the commissionman sends the balance to the stockman b bank draft or check. Usually even before final settlement th non-resident shipper receives a statement of the gross proceed of the sale with necessary deductions.

In the past the central commissionmen frequently finance stock raisers and feeders who required funds between seasons taking chattel mortgages on their livestock as security fo loans. This system has largely, although not entirely, disap peared, for a larger number of stockmen have in recent year been able to finance themselves, and others are able to obtai funds from local banks which are financially stronger tha they were in the past.

**Coöperative Livestock Shipping Associations.**—A recen development in livestock marketing is the formation by stoc growers of coöperative shipping associations. The movemen has become of general importance since 1908 but there ar instances of successful "lamb clubs" organized over twent years ago.[1] These associations enable farmers, who do no raise a sufficient number of animals to ship individually car load lots, to combine their shipments into lots of sufficien size and thus to avoid selling to local dealers. The manage of such an association ships the livestock of members directl to the central markets, sees that it is properly cared for en route, and sells it through central commissionmen in the sam way that carload shipments are usually sold. The association may, however, obtain bids directly from central market buy

[1] *See* D. H. Doane, The Coöperative Lamb Club as an Agency fo Lower Marketing Costs, *The Annals of the American Academy o Political and Social Science*, Nov., 1913, pp. 216-222; L. D. H. Weld Statistics of Coöperation among Farmers in Minnesota, Minnesot Agricultural Experiment Station Bulletin No. 146, pp. 17-18.

rs. In either case the usual effect of the associations is to educe marketing costs and to obtain higher prices than those ffered by local livestock dealers.

**Sales to Local Livestock Dealers.**—In regions where the ivestock industry is of secondary importance or wherever the ndividual farmers have less than full carloads of stock for ale, and have not organized coöperative shipping associations, hey may sell to local livestock dealers. These dealers, many f whom are themselves farmers, canvass the surrounding ommunity for surplus stock, and when they have a carload hip it to the central markets where they sell it in the same vay that large ranchers do. They usually buy on their own ccount, the prices which they pay to the farmers being argely the result of personal bargaining.

**Sales to Local Slaughterers and Retail Butchers.**—Farmrs sell a portion of their livestock to local slaughterers and etail butchers, some of whom depend upon the surrounding gricultural community for all or part of their meat supply. In 1909, for example, the Census Office reported that ,000,000 cattle and calves, 2,750,000 hogs and 1,750,000 heep were slaughtered in retail establishments.

**Private Sales to Packers.**—Western ranchers and feeders ometimes sell their stock directly to meat-packing concerns which may send buying agents to contract privately for the elivery of a specified number of carloads. The packers of the Mississippi and Ohio River valleys, however, buy most of their upply in the public stockyards at current prices which are known alike by sellers and buyers. It is only on the Pacific Slope that the private sale by stock grower to packer is a common method of selling livestock.[1] At a few places such as San Francisco and Portland public livestock markets have been established and sales may be made through commissionmen, but even there the stock growers and packers may deal directly with each other.

**Private Sales to Feeders.**—While the feeders obtain most of their unfed stock in the central stockyards they also buy

[1] F. Andrews: Marketing Grain and Livestock in the Pacific Coast Region, pp. 92-93.

cattle and sheep directly from ranches and farmers at private sale. Relatively few hogs are sold to feeders, because the farmers usually fatten them for the market, and recently the farmers have to an increasing extent undertaken the feeding of lambs. There are many professional feeders, however, who fatten native lambs and western sheep and lambs and many who feed western range cattle for final sale in the central markets.

## BIBLIOGRAPHY

See references designated by an *, appended to chapter IX pp. 200, 201.

# CHAPTER IX

## CENTRAL LIVESTOCK MARKETS

As the livestock industry gradually moved from the Atlantic seaboard to the western ranges two thousand miles inland, the central livestock markets followed in its trail. They are in most instances packing and slaughtering centers, for the refrigeration car service has made it more economical to ship dressed meat and meat products to distant markets than to ship the live animals. Livestock is even now shipped from the ranges to the central markets, a distance in some instances of a thousand miles, and many carloads are shipped to eastern markets, but the stock movement is mainly from the ranges, ranches, farms and feeding grounds to the central markets of the Mississippi and Ohio valleys.

**Central Market Receipts.**—Cincinnati was the original western packing center, and still remains a market of importance, and Cleveland, Detroit, Indianapolis and Louisville are also Ohio Valley markets of considerable moment. The principal western market, however, has long been at Chicago, for it is there that the great packing concerns first constructed their plants and still purchase from 21 to 25 per cent. of the packing output of the western livestock states. From 2,500,000 to nearly 3,500,000 cattle, 6- to 9,000,000 hogs, and 5- or 6,000,000 sheep are annually sold in the Chicago market. Twenty-four railroads carry livestock to Chicago not only from the surrounding feeding grounds, but from the local shipping points and smaller central markets of the trans-Mississippi Valley.

As is shown in Map No. VII and Table No. VIII, though Chicago is the greatest central market, many others have been established beyond the Mississippi River. The packers look

upon them as "subsidiary markets," at which some of their plants are located and from which their Chicago plants receive a part of their stock supply. In the words of one of the principal packers, "not only have the packers built up a great central cash market (Chicago), but they have gone out to meet the cattlemen by establishing subsidiary markets in the heart of the cattle industry. These outposts of the packing industry have had their advantages to their owners, but I believe they have carried still greater advantages to the cattlemen . . . in that they shorten his haul to market. This not only means a saving of freight, but the avoiding of shrinkage in weight and deterioration in quality. It also means that at the time of sharp demand he can get his cattle into the near market in time to realize the high price, while he would not, perhaps, be able to rush them into the distant central market before the extraordinary demand would be satisfied and prices drop back again. . . . The subsidiary market has immensely influenced the general production of a better quality of beef by facilitating the feeding or 'finishing' of cattle brought in from the ranges. . . . The extension of the packing industry to these points has changed the agricultural map of the states tributary to these auxiliary markets, making them the richest feeding grounds in the country."[1] The chief trans-Mississippi central markets are at Kansas City, Omaha, St. Louis, St. Joseph, St. Paul, Sioux City, Fort Worth, Denver, Wichita, Ottumwa, Cedar Rapids and Oklahoma City. The receipts of the first four of these markets have become so large that they can at present scarcely be regarded as mere auxiliary markets.

The Ohio Valley and middle-western markets, including in addition to those previously mentioned (page 181) Milwaukee, Cudahy and Peoria, are chiefly important as hog markets, although they also receive large numbers of cattle and sheep.

**Central Market Competition.**—The livestock buyers at the central markets of the West are principally the large western packers, smaller western packers and wholesale slaughterers,

[1] J. O. Armour: The Packers, etc., pp. 116-117.

TABLE VIII

RECEIPTS AND SHIPMENTS AT FOURTEEN CENTRAL MARKETS*

| Markets | Receipts | | Shipments | |
|---|---|---|---|---|
| | 1905 | 1910† | 1905 | 1910‡ |
| Chicago | 16,848,383 | 14,708,171 | 4,822,561 | 4,043,421 |
| Kansas City | 6,249,098 | 6,433,881 | 1,429,365 | 1,864,751 |
| Omaha | 5,290,850 | 6,102,717 | 1,502,967 | 2,356,262 |
| St. Louis | 4,351,950 | 4,681,377 | 996,297 | 1,222,906 |
| St. Joseph | 3,427,955 | 2,476,790 | 492,765 | 332,190 |
| St. Paul | 2,162,239 | 2,304,363 | 997,484 | 1,235,696 |
| Sioux City | 1,758,212 | 1,633,747 | 554,355 | 478,902 |
| Cincinnati | 2,043,929 | 1,722,940 | 904,805 | 827,975 |
| Cleveland | 1,547,018 | 1,019,879 | 173,828 | 272,655 |
| Denver | 1,222,474 | 1,181,409 | 888,496 | 814,797 |
| Fort Worth | 1,400,123 | 1,774,702 | 364,900 | 438,858 |
| Indianapolis | 928,552 | 2,032,550 | 293,497 | 775,628 |
| Louisville | 1,059,461 | 920,395 | 606,130 | 693,167 |
| Peoria | 489,524 | 366,070 | 415,467 | 353,019 |
| Total | 48,779,768 | 47,358,991 | 14,442,917 | 15,710,227 |

* Bureau of Statistics: Monthly Summary of Finance and Commerce, Dec., 1905, and 1910—including cattle, calves, hogs, sheep and lambs.
† Wichita, 795, 732.
‡ Wichita, 151, 317.

eastern packers and slaughterers, exporters, stockers and feeders. The feeders, however, can scarcely be regarded as the competitors of packers and slaughterers, for their business is mainly to purchase "feeders," prepare them for market and then sell them to the packers and slaughterers; they do not compete for fat stock which is ready for the market. Eastern packers and slaughterers are competitive factors in the western markets but are of declining importance, because long-established practice has shown it to be more economical to ship the dressed meat from the West than to ship the live animals. Though New York, Boston, Baltimore and Philadelphia each receive from 1- to 5,000,000 live animals annually, their packers and slaughterers depend largely upon the eastern states for their supply, and provide but a small proportion of total meat consumption of the cities in which they are located.

The smaller western packers and slaughterers have always been a source of competition in the central markets, but one of limited scope. In the cattle trade it has been pointed out that although the six largest western packing companies kill but 45 per cent. of the annual slaughter of cattle in the entire United States, they "pack nearly 98 per cent. of all the cattle killed in the eight leading western packing centers. Their proportion of the beef cattle purchased in these eight markets is somewhat smaller, because, especially at Chicago, a considerable number of cattle are bought by other concerns for shipment alive to eastern points and to Europe where they are slaughtered." [1]

On the whole there is less active competition in the central livestock markets than in the primary grain and central cotton markets, because the number of competitive buyers is more limited. There is also less active competition *between* the livestock centers, because the principal buyers are the same in most of the largest western markets.[2] Each of the six great packing companies, for example, have plants at Chicago and Kansas City, four of them in Omaha and St. Louis, and three in St. Joseph. Inter-market competition in the cattle industry is also modified in that to some extent the trans-Mississippi markets purchase different grades than are bought at Chicago and other middle-western points. They depend to a larger extent upon the grass-fed cattle of the northwestern and southwestern ranges, while the Chicago market receives more native stock and western and Texas cattle which have been fattened for the market. Though there is some competition between "feeders and stockers" and fed cattle, the prices paid for the former are lower and do not uniformly fluctuate with the prices paid at Chicago for corn-fed stock.

The stock grower is not, however, in a helpless position.

[1] Bureau of Corporations: The Beef Industry (1905), pp. xxi, 57-81.

[2] Chief packing companies are: Armour & Co., Swift & Co., Morris & Co., Schwarzchild & Sulzberger Co., National Packing Co., and the Cudahy Packing Co.

The increased demand for meat as compared with its supply has in recent years resulted in a higher price for livestock; the foreign market for cattle is at all times available, and may be used whenever differences in prices warrant; the smaller packers and slaughterers of the West and East are appreciable factors in the livestock market; and the probability of "potential competition" would prevent an unreasonable and permanent depression of livestock prices as compared with the price of dressed meats and meat products. During the great packing-house strike of 1904, for example, the increased purchases of the smaller packers and slaughterers did much to support the livestock markets. "The strike made evident the fact that there are hundreds of slaughtering establishments which now operate at much less than their full capacity, and that it is a matter of a few days only for them materially to increase their output." [1]

**Shipment from Central Markets.**—Only about 20 per cent. of the hogs, less than 40 per cent. of the cattle and 35 to over 40 per cent. of the sheep annually sold in the central livestock markets of the West are shipped out of them as live animals. These shipments, moreover, are gross rather than net, for the central markets ship to one another, Chicago and other middle-western markets regularly receiving many animals which were originally sold by the stock growers in the markets of the trans-Mississippi Valley. The bulk of the livestock received at the central markets of the West is slaughtered by the western packers and wholesale slaughterers and is shipped to all parts of the United States and to many foreign markets in the form of dressed meat and meat products.

The live animals shipped out of the central markets are variously disposed of: (1) Feeders are shipped to nearby farms and feeding grounds, to be returned to the central markets for final sale. Many of the stockers are similarly handled, although some of them are retained on the farms for dairy or breeding purposes. (2) Many of the shipments, particularly from the trans-Mississippi markets, are destined to

[1] Bureau of Corporations: The Beef Industry, p. 84.

Chicago, Indianapolis, Cleveland, Detroit, Cincinnati, Louisville and other central markets in the Ohio Valley. (3) Some livestock is regularly shipped from the western stockyards to eastern livestock markets such as Buffalo and Pittsburgh in the interior and New York, Boston, Baltimore and Philadelphia on the seaboard, to be slaughtered by eastern packers and slaughterers.

(4) While during the years 1890 to 1908 from 300,000 to nearly 600,000 live cattle were annually exported to foreign markets, since then the yearly exports have varied from 100,000 to 200,000. Although these exports pass through the ports, they originate largely in the western stock centers, mainly in Chicago, and they are destined largely to Great Britain. Many forms of meat products are shipped to Germany, Holland, Belgium, France and other European countries, and to the West Indies, Canada, Brazil and other non-European countries, but these countries provide a market for relatively few American beef cattle. The annual exports of American sheep and hogs have never exceeded 270,000 and 60,000 respectively.

The livestock shipped out of the western centers is generally purchased at the stockyards of those markets. The feeders and stockers are purchased by farmers and professional stockmen; the eastern shipments by eastern packers and slaughterers, and the export cattle by western packers and export concerns or by exporters located at the eastern ports. The stock shipped from one western center to another may be purchased either at the shipping or at the receiving center by any of the various types of central cattle buyers.

**Relative Importance of Packers and Wholesale Slaughterers.**—The Thirteenth Census of the United States reported the relative proportions of the total slaughter of cattle, sheep and hogs by packing and wholesale slaughtering plants, retailers and farmers during the year 1909 to be as shown in the table on the following page.

**Functions of Central Markets.**—(1) The livestock centers of the Mississippi and Ohio valleys serve as great cash markets where cattle, hogs, sheep, horses and other meat and

| Livestock* | Per Cent. Killed by Packers and Wholesale Slaughterers | Per Cent. Killed by Retailers | Per Cent. Killed on Farms |
|---|---|---|---|
| Cattle | 59.6 | 30.0 | 10.3 |
| Calves | 38.4 | 44.2 | 17.4 |
| Sheep | 83.2 | 13.2 | 3.6 |
| Hogs | 63.6 | 7.5 | 28.9 |

* U. S. Census, Vol. X (1910), p. 344.

draft animals may be sold by stock growers, feeders and local dealers. (2) They provided facilities for the handling, care, feeding, weighing, buying and selling of livestock, and the financing of sales. (3) Through their exchanges they enforce rules governing the purchase and sale of livestock. (4) They facilitate the collection of information as to the supply, demand, and other considerations influencing the trade. (5) While livestock prices are not general as are those of grain and cotton, the central markets do much to facilitate the quotation and publication of prices. (6) They serve as central points from which livestock may conveniently be shipped to stockmen, feeders and eastern buyers, and be exported to foreign markets. (7) Most of the central markets are great packing and slaughtering centers, indeed, they are the final market for about 70 per cent. of their entire receipts of cattle, hogs and sheep. (8) Their concentration of large numbers of animals at relatively few places, and their close connection with packing and slaughtering plants greatly facilitate the federal and state inspection of livestock and meats.

### Organization and Description of Central Markets

**The Stockyards.**—The livestock trade of the central markets is conducted at large stockyards owned and operated by stockyard companies. Usually nearly all the business of a particular market is confined to the yards of a single large company, such as the Union Stock Yards and Transit Co. of

Chicago, the Kansas City Stock Yards Co., the Union Stock Yards Co. of Omaha, and the St. Louis National Stock Yards. These companies are owned largely by the packing concerns and the railroads, but the yards are open markets available to all who desire to buy or sell livestock. They are located in the suburbs of the cities, the yards and nearby packing and slaughtering plants being the basis of packing towns of considerable population and area. The Union stockyards at Chicago have an area of 500 acres and are able at one time to hold 75,000 cattle, 125,000 sheep, 300,000 hogs and 6,000 horses and mules.[1]

The stockyards are divided into sections and blocks with main driveways, alleys and overhead viaducts. They are fully equipped with stock houses and pens, feed and water boxes and troughs, running water, receiving and shipping platforms, railroad switching tracks and scales. Adjacent to them are packing and slaughtering plants, and nearby are the offices of the commissionmen or brokers who do the buying and selling for their customers, and banks where balances may be settled. The companies provide the necessary number of employees to feed, water and weigh the stock, issue weight tickets and keep the yards in a sanitary condition.

**Livestock Exchanges.**—The buying and selling is conducted in accordance with the rules of the livestock exchanges which have been organized at the western markets. In case of the Chicago Live Stock Exchange, for example:

> Any person of good character and credit, and of legal age, whose interests are centered at the Union Stock Yards of Chicago, Illinois, on presenting a written application, endorsed by two members, and stating the name and business avocation of the applicant, after ten days' notice of such application shall have been posted on the bulletin of the Exchange, may be admitted to membership in the Exchange, upon approval by at least seven affirmative ballot-votes of the Board of Directors, and upon payment of an initiation fee of fifteen hundred dollars—$1,500—or on presentation of a certificate of unimpaired

[1] Frank Andrews: "Cost and Methods of Transporting Meat Animals," U. S. Department of Agriculture Year Book (1908), p. 236.

or unforfeited membership, duly transferred, and by signing an agreement to abide by the Rules, Regulations and By-Laws of the Exchange, and all amendments that may, in due form, be made thereto.

The organization of the livestock exchanges is similar to that of grain and cotton exchanges. They have a president; one or more vice-presidents; a secretary; treasurer; and arbitration, appeals, prosecuting and other committees. They have regulations prohibiting the violation of the stock inspection rules, dealing in condemned livestock, wash sales, fictitious price quotations and rebates, improper solicitation of livestock consigned to another member of the exchange, and other practices regarded as undesirable. They fix the hours during which trade may be conducted and the minimum commissions charged for buying and selling.[1]

The livestock exchanges, however, differ widely from the large grain and cotton exchanges in that they are spot or cash markets. There are certain so-called "speculators" and "yard-traders" at the stockyards, but as speculative "futures" are not bought and sold on the livestock exchanges they are obliged to conduct a cash business.

**Sales at the Stockyards.**—Stock cars are usually, though not always, timed so that the livestock arrives at the yards early in the morning. The stock is there unloaded, driven to selling pens, and fed and watered. The commissionman acting for the shipper then divides the animals into "bunches" of from one to several hundred with a view to adjusting the number to the needs of a prospective buyer or to obtaining uniformity in character and quality. "Such uniformity," states the Bureau of Corporations, "makes it easier to determine the value of the bunch than would be the case if the animals were mixed. This classification for the purpose of sale, which is sometimes made at the instance of the buyers, but more often at that of salesmen, is most conspicuous in the case of cattle. A mixed shipment of cattle is usually divided according to sex, cows are separated from heifers, bulls

[1] *See* chap. viii, p. 177.

and stags from steers, and often there is a further subdivisio of steers according to age or quality." [1]

The sales are made in terms of one hundred pounds, fina settlement being made after the animals have been weighe on scales which are usually in charge of weigh masters, an which hold from fifty to sixty cattle at one time. The weigh tickets issued at the scales, which are the basis of settlemen show the number of animals weighed, their weight and th names of the commissionman and buyer. Animals which th federal or state inspectors have not found to be diseased ar then taken to the packing and slaughtering plants or to ship ping pens for shipment to farms, feeding grounds and eastern western or foreign markets.

In settling for the livestock, the commissionman, repre senting the original owner, makes out a bill on the basis o the weight shown in the scale ticket or record and the pric per one hundred pounds agreed upon. The buyer indorse the bill and returns it to the commissionman with order o check attached, and when paid by the bank the accepted bi serves as the commissionman's receipt of the transaction. H then deducts from the gross proceeds the railroad freigh charges, feeding costs, weighing fees or yardage, transfe (switching) charges if any are due, and his commission, an pays the balance to the shipper. If his customer is non-res dent he usually sends a statement of gross proceeds and dedu tions to him immediately after the sale, and a check or dra after settlement has been made. There are one or more bank of good credit near each of the large stockyards which mak a special business of financing livestock transactions.

**Marketing Costs.**—The cost of marketing livestock varie to some extent in the different central markets. Usually ther is no special charge for the general use of the stockyards, bu there is a weighing charge sometimes called "yardage" of se 25 cents per head of cattle, 10 cents of calves, 6 or 8 cents o hogs and 5 cents of sheep. In case the stock is fed at th yards, the stockyard company also charges for the food at sp cified prices per 100 pounds of hay or alfalfa or per bushel o

[1] The Beef Industry, p. 16.

corn or oats. At Chicago the carriers collect an additional terminal charge of $1.00, formerly $2.00 per car, for switching the cars to the stockyards. The commissionman's charge likewise is a marketing cost to the shipper, and so are the railroad freight charges, and if the stock is shipped from distant points, the cost of feeding en route.[1]

The total cost of shipping a steer from the ranges of the northwestern grazing grounds to Chicago and marketing it at that center varies approximately from $5 to $9. The various items are substantially as follows:

| | Low | High |
|---|---|---|
| Trailing to local shipping point.... | $0.05 | $0.25 |
| Railroad freight ..... | 3.85 | 7.26 |
| Feed en route (at $2 per car)..... | .16 | .32 |
| Shippers in charge ($12 per car).... | .08 | .08 |
| Switching charges at Chicago (at $1 per car) ..... | .04 | .04 |
| Feed at Chicago ..... | .25 | .25 |
| Yardage at Chicago ..... | .25 | .25 |
| Commission at Chicago ..... | .50 | .50 |
| Total ..... | $5.18 | $8.95 |

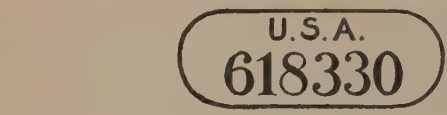
## Livestock and Meat Inspection at Central Markets

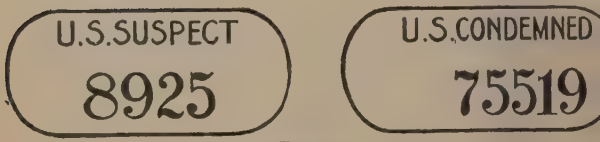
There is no public or exchange inspection of livestock for the purpose of establishing commercial classes or grades. Some of the livestock exchanges have established rules governing the dockage and shrinkage of hogs, and have inspectors to enforce their rules and determine the number of unmerchantable and inferior hogs in a given lot. Some of them also have brand inspectors to ascertain errors or dishonesty in the brands of western and Texan cattle, but commercial classification and grading is left to the individual sellers, commissionmen and buyers.

Public inspection of livestock at the central yards is concerned with disease, sanitation and public health. The Bu-

[1] *See* chap. viii, p. 172.

reau of Animal Industry of the Department of Agriculture equipped with livestock and meat inspectors, chemists, patro men, etc., for the inspection of interstate and foreign shi




FORM 19

ments of livestock and meats in all their stages of slaughte ing, curing, canning or other preparation. The federal i spection laws also provide for sanitary equipment, condition

FORM 20

and methods, and prohibit the use of harmful chemicals an preservatives and of misleading brands.[1]

[1] Acts of Aug. 30, 1890, Mar. 22, 1898, and June 30, 1906.

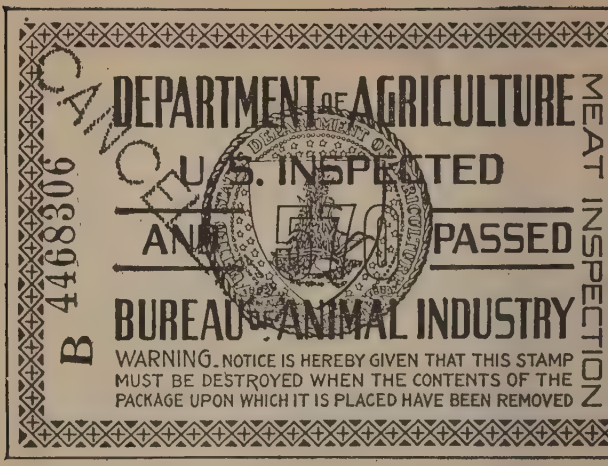
When subjected to the ante-mortem examination the animals are tagged as "passed," "condemned" or "U. S. suspect," each tag being numbered (*See* Form No. 19). Condemned animals may not be sold, while a sale of suspected animals is not finally completed until after a post-mortem examination has been made. Suspected animals are set apart from those which are passed, and are separately slaughtered.

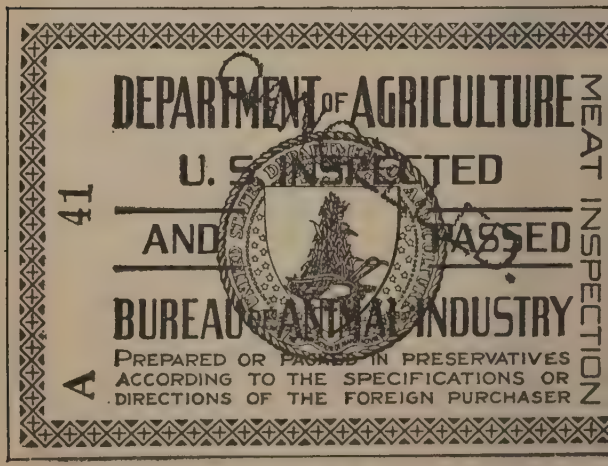
Any carcass or parts which are found to be unsound during the post-mortem examination at the packing and slaught-

Form 21

ering plants are condemned and sent to the "condemned" rooms to be denatured or tanked so as to make them useless for food purposes. Those suspected of disease during the post-mortem inspection are marked "U. S. retained" and removed to separate compartments known as "retaining rooms" for final inspection, and if found to be unsound they are later sent to the condemned rooms. (*See* Form No. 20.)

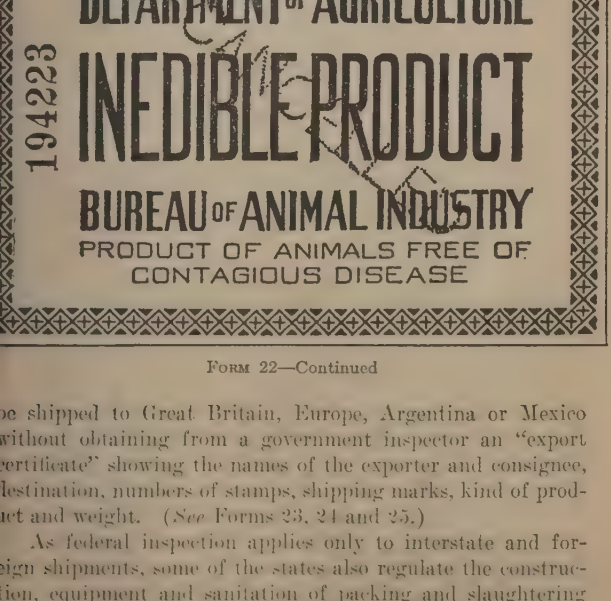
Particular care is taken in the case of animals or meats exported to foreign markets. Many of the export cattle are inspected first at the interior markets and again at the ports. They are tagged for identification at the interior yards and records are kept so that an outbreak of disease may be traced back to its origin. The ocean vessels which carry them are


CANCELED
B 4468306
DEPARTMENT OF AGRICULTURE
U.S. INSPECTED
AND PASSED
BUREAU OF ANIMAL INDUSTRY
WARNING. NOTICE IS HEREBY GIVEN THAT THIS STAMP MUST BE DESTROYED WHEN THE CONTENTS OF THE PACKAGE UPON WHICH IT IS PLACED HAVE BEEN REMOVED
MEAT INSPECTION


A 41
DEPARTMENT OF AGRICULTURE
U.S. INSPECTED
AND PASSED
BUREAU OF ANIMAL INDUSTRY
PREPARED OR PACKED IN PRESERVATIVES ACCORDING TO THE SPECIFICATIONS OR DIRECTIONS OF THE FOREIGN PURCHASER
MEAT INSPECTION

FORM 22

also inspected as to sanitation, fittings, feed, water, attendants, etc., so that the animals may arrive in good condition, and with the exception of some destinations which have been exempted, the vessels may not clear until the Department of Agriculture has issued a certificate of inspection such as is reproduced in Form No. 21. Export meat is likewise subjected to special inspection. The packages have attached to them "export stamps" such as are shown in Form 22, and may not




FORM 22—Continued

be shipped to Great Britain, Europe, Argentina or Mexico without obtaining from a government inspector an "export certificate" showing the names of the exporter and consignee, destination, numbers of stamps, shipping marks, kind of product and weight. (*See* Forms 23, 24 and 25.)

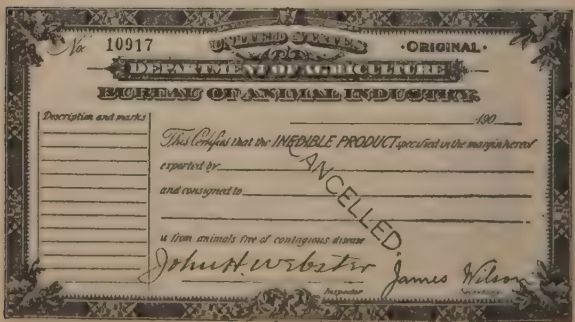
As federal inspection applies only to interstate and foreign shipments, some of the states also regulate the construction, equipment and sanitation of packing and slaughtering establishments, and make provision for inspection by state inspectors. Some municipalities further supplement federal

No. 296616
UNITED STATES
ORIGINAL
DEPARTMENT OF AGRICULTURE
BUREAU OF ANIMAL INDUSTRY
Description and marks
This Certifies that the
exported by
and consigned to
CANCELLED
is from animals that were free from disease and that it has been inspected and passed as sound and wholesome and has been prepared or packed in accordance with the regulations of the Department.
Inspector
Secretary

FORM 23

No. 219750
UNITED STATES
ORIGINAL
DEPARTMENT OF AGRICULTURE
BUREAU OF ANIMAL INDUSTRY
Description and marks
This Certifies that the meats or meat food product specified in the margin hereof
exported by
and consigned to
CANCELLED
is from animals that were free from disease and that it has been inspected and passed as sound and wholesome and has been prepared or packed in preservatives according to the specifications or direction of the foreign purchaser, as provided by law and the regulations of the Department.
Inspector
Secretary

FORM 24




FORM 25

inspection by prohibiting the local sale of unsound meat and providing for municipal inspection.

## Livestock Prices

There is no general wholesale price in the cattle, hog or sheep trades as there is in the grain and cotton trades. In the cattle markets, for example, although the prices of native, western and Texan steers constitute general guides, the actual prices paid for particular lots vary widely according to quality, character, conditions of production and other considerations. There is no basis grade of cattle as there is of cotton or wheat. There is likewise no individual market or small group of markets which determine cattle prices throughout the country. Chicago prices show the general movement of cattle prices but cannot be taken as a standard, because they are usually higher than in markets located further west and their fluctuations are influenced by a relatively large proportion of corn-fed cattle. There is, moreover, no great speculative livestock market where present and future conditions of supply and demand are so systematically discounted as in the grain and cotton trades. There is of course a general relation between the prices paid at the various central livestock markets, for spot exchanges have been organized, telegraphic connections have been established, the prices of the leading varieties and classes of livestock are published in the daily press and in livestock trade journals, and the principal buyers at most of the western markets are the large packing companies.

Since most of the stock throughout the West is shipped direct to central markets by the growers, country and central market prices are in many cases synonymous. The prices paid by local dealers to farmers who do not sell at the central markets bear a general relation to the prices paid in those markets, for there frequently is competition between different local dealers and between dealers and retail butchers. Central market prices, moreover, are published in newspapers and farm journals where they can be readily seen by farmers. In

many instances, however, the country prices are the product of individual bargaining, the dealers endeavoring to buy as far as possible under the prevailing central market prices.

The factors influencing the prices paid at the central markets are various. As in the case of grain and cotton they are primarily affected by considerations of *supply and demand.* To some extent there is a seasonal variation in the supply of livestock which affects prices, but the most pronounced variation is the periodical increase or decrease of the country's total supply of meat animals. Though other considerations were instrumental, there can be no doubt that the increase in livestock prices since 1906 and 1907 was largely due to a shortage in the total supply of available beef cattle, sheep and hogs, the first two declining in absolute numbers, and the last increasing less rapidly than the market demand.

The market demand for livestock is affected not only by the growth of population and demand for meat in the United States, but by the demand for American livestock and especially for American meat products in foreign markets, by foreign tariffs and import regulations, and by the amount of competition or coöperation between livestock buyers.

Livestock prices are also influenced by *considerations of quality.*[1] Differences in quality largely explain the difference between the prices of native and Texan cattle, range cattle and corn-fed cattle, steers and cows, cattle and calves, sheep and lambs. Quality for meat purposes depends to some extent upon the nature of breed. The Texan "long-horns" which were so numerous in the past compare unfavorably with the fancy beef cattle which are displacing them. Southern "razorbacks" compare unfavorably with the improved breeds of hogs in the corn belt, and ordinary wool-growing sheep with sheep bred both for mutton and wool.

Weight is also a consideration affecting quality. Price records indicate that for stock of a given sex and age, "the higher average weight carries with it in each case a higher average price."[2] Sex and age are factors of quality, and so

[1] *See* Bureau of Corporations: The Beef Industry, pp. 106-118.
[2] *Ibid.*, p. 111.

are the dressing percentage or amount of beef, pork or mutton per one hundred pounds of live weight, the kind of food used, and the value or probable value of by-products such as the hides, butter fat and lard.

While the *cost of production* does not determine livestock prices it too exerts an influence. Prices have at times been below cost, but unless they are sufficiently high to yield a profit to ranchers, rangers, farmers or stock feeders a reaction upon the number of animals raised gradually follows. The principal cost items are land and other capital costs, range rentals, labor, food or forage, losses from diseases or other causes, taxes, fuel for sheep and cattle camps, and in some cases the cost of obtaining a water supply and of dipping diseased stock. In the case of farmers or feeders who purchase range stock and young animals to prepare them for market the chief items are the cost of the feeders and stockers and the cost of corn or other feed. Whether the farmers are corn growers or purchase it from others, the price of corn affects the price of livestock, for if the price of fed animals is relatively too low it becomes unprofitable to feed them with corn. In the case of sheep the cost of production is charged partly to their mutton and partly to their wool value.[1] The increase in many of these cost items in recent years is reflected in the increased prices of livestock.

Similar to cost of production are *transportation and marketing costs* which have been discussed in another connection. Marketing costs are so small that they exert little influence upon prices, but transportation costs are partly responsible for the price differences existing between the markets of the Far West, those of the Ohio Valley and those on the Atlantic seaboard. Differences in transportation costs and quality are mainly responsible for the higher level of cattle prices paid at Chicago than at the central markets of the trans-Mississippi Valley.

General price factors not peculiar to livestock are discussed in Chapter XVII.

[1] For statistics *see* Tariff Board: Wool and Manufactures of Wool, vol. i, pp. 315-377.

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*See also* the annual reports of the following stockyards and exchanges for livestock statistics: Chicago Union Stock Yards Co., Omaha Union Stock Yards Co., St. Joseph Stock Yards Co., St. Paul Stock Yards Co., Sioux City Stock Yards Co., Denver Union Stock Yards Co., Indianapolis Stock Yards Co., Wichita Union Stock Yards Co., St. Louis Merchants' Exchange, Cincinnati Chamber of Commerce, and Cleveland Chamber of Commerce.

* References designated by an * apply also to chap. viii.

# CHAPTER X

## THE WOOL MARKET

The wool trade of the United States differs from the agricultural trades considered thus far in the great distance which separates the central markets from the principal sources of the domestic supply. The ranges of the Rocky Mountains are from two to three thousand miles distant from the Boston wool market, the largest in the country. The wool trade is also affected to a much greater extent by production in foreign countries, from 30 to over 40 per cent. of the annual mill consumption being imported from abroad, although the American output of wool was for many years partially protected by high import duties which were not removed until December 1, 1913. The methods of buying, selling, concentrating and distributing wool, moreover, contain distinguishing trade features.

### Supply and Distribution of Wool

**Wool Production in the United States.**—The status and distribution of the sheep-growing industry of the United States as discussed in the preceding chapter, indicates in general the sections of the country which are important in the production of wool. The wool trade, however, is more particularly concerned with that portion of the industry which produces wool as distinct from mutton and lamb. The Census Office, for example, reported the total number of sheep in the United States as of April 15, 1910, to be 52,839,000, but when lambs are excluded from this number it is decreased to 39,644,000. The National Association of Wool Manufacturers likewise placed the number of sheep of shearing age on

April 1, 1910, at 41,999,500, and on April 1, 1913, at 36,319,000.

Wool production, even more than sheep production, is confined largely to the three far-western districts—the northwestern and southwestern mountain ranges and the Pacific Slope. (*See* Map No. VIII.) Not only has the total number of sheep raised in the leading central Mississippi and Ohio Valley states declined greatly since the seventies and eighties, but many of the sheep growers in these states have undertaken the production of mutton and lamb in preference to wool. Although they produce some of the finest wool grown in the United States, their merino and other fine wool flocks have been displaced or crossbred with English mutton breeds.[1] Wool is graded largely on the basis of the percentage of merino blood in the sheep, and on this basis it is estimated that at present but 23 per cent. of the wool grown east of the Mississippi and in Minnesota, Iowa and Missouri grades above "half-blood," while 8 per cent. grades as "half-blood," and 69 per cent. as ⅜ blood and below.[2]

The great decline in the number of sheep raised in the Ohio and central Mississippi valleys since the seventies and eighties was more than counterbalanced by the growth of the sheep industry in the mountain states, particularly in Wyoming, Montana, and Idaho. The number in Texas, California, and Mexico has declined since 1890, but here as also in Oregon, Utah, and Colorado the sheep industry has remained an important one. A much larger proportion of the sheep of these mountain and far-western ranges, moreover, consists of fine wool types, for although the growers of northwestern mountain states breed for mutton as well as wool, merino and rambouillet sheep still predominate. It is estimated that 66 per cent. of the total wool produced in the mountain and Pacific states grades above, and 22 per cent. as ½-blood

[1] In the central Mississippi and Ohio valleys the leading breeds are the Shropshire, Oxford and Hampshire. In Kentucky and Tennessee there are many Southdowns.

[2] United States Board: Wool and Manufactures of Wool, vol. i, p. 300.

wool, and but 1² per cent. as ³⁄₈ blood or below. In 1913 these range states, which are more fully described in Map No. IX produced 65 per cent. of the country's wool clip.[1]

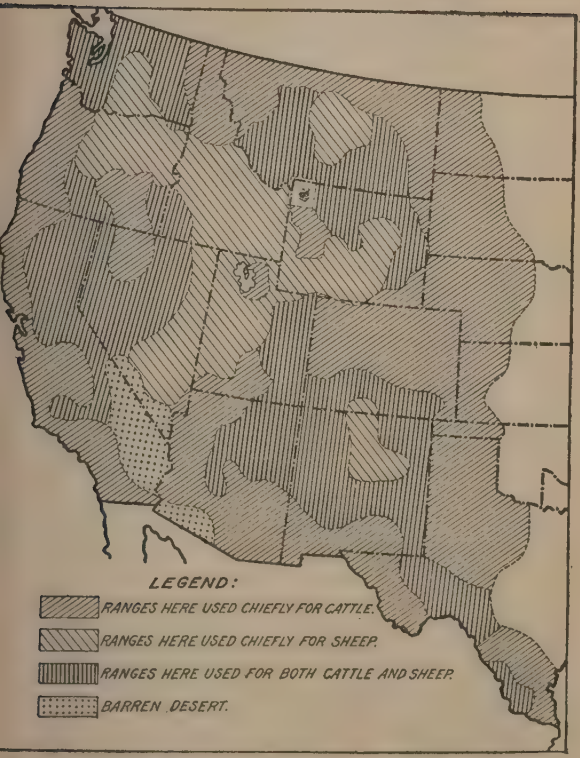
Owing to the shift from wool breeds to mutton breeds in many parts of the United States, the output of wool did not keep pace with the number of sheep on American farms and ranges. The maximum wool clip was produced in 1893, when 348,500,000 pounds were sheared as compared with 296,200,000 in 1913. In 1902-1903, when the Department of Agriculture reported the maximum number of sheep, the annual wool output aggregated 316,341,000 pounds, and since then it has usually averaged about 300,000,000 pounds. The decline in the last few years is due chiefly to the unusually large number of sheep and lambs sold to packers and slaughterers.

**Imports of Foreign Wool.**—The wool trade differs from the grain, cotton and livestock trades in that it is obliged to compete for the domestic market against foreign producers. In contrast with the commodities previously considered, practically no domestic wool is exported from the United States. Indeed the country's wool manufacturing industries find it necessary annually to import from 30 to over 40 per cent. of their raw wool supply. The total production of American wool, the imports, and the consumption of wool in recent years are shown in table No. IX (page 206).

Large quantities of foreign wool are purchased in Great Britain and some in Belgium, France and Germany, for these countries act as brokers in the wool trade, but most of the wool imported from abroad originates in Australia, Argentina, New Zealand, China, Russia and South Africa. Of 195,293,000 pounds imported in the fiscal year 1913, 111,168,000 consisted of low-grade wools, originating chiefly in China, Russia, East India, other Asiatic countries, the Scotch highlands and parts of South America where native sheep are raised. They were until the revision of the tariff in October

[1] National Association of Wool Manufacturers: Annual Wool Review (1913), p. 6, not including pulled wool, the origin of which is not stated.

MAP IX.—LOCATION OF RANGE COUNTRY.[1]


LEGEND:
RANGES HERE USED CHIEFLY FOR CATTLE.
RANGES HERE USED CHIEFLY FOR SHEEP.
RANGES HERE USED FOR BOTH CATTLE AND SHEEP.
BARREN DESERT.

[1] From U. S. Department of Agriculture, Year Book, 1908, p. 233 (Frank Andrews: Cost and Methods of Transporting Meat Animals).

1913, known as Class III wools and were largely used in the carpet industry. Twenty-nine million, nine hundred and thirty-seven thousand pounds consisted of high-grade wools used largely in the worsted and corded woolen industries. They were known as Class I or "clothing" wools, and originated chiefly in the merino and merino crossbred flocks of Australia, Argentina, New Zealand, Uruguay and South Africa. The remainder or 16,886,000 pounds consisted of

TABLE IX

DOMESTIC OUTPUT, IMPORTS AND CONSUMPTION OF WOOL*
(000 omitted)

| Years | Domestic Output† | Imports‡ | Consumption‡ | Per Cent. of Consumption Foreign |
|---|---|---|---|---|
| 1881–1890 (av.) | 280,700 | 93,195 | 369,485 | 24.1 |
| 1900 | 288,637 | 155,928 | 436,663 | 34.4 |
| 1910 | 321,363 | 263,928 | 581,236 | 44.7 |
| 1911 | 318,547 | 137,648 | 447,990 | 28.9 |
| 1912 | 304,043 | 193,401 | 495,724 | 38.8 |
| 1913 | 296,175 | 195,293 | 486,266 | 39.3 |

* National Association of Wool Manufacturers, Annual Wool Review; Department of Commerce: Annual Commerce and Navigation Reports, and Statistical Abstract.
† Years ending April first.
‡ Years ending June thirtieth.

wool of the grade produced by the various types of English sheep or crossbreeds other than merino crosses, and of hair of the Angora goat (mohair), Alpaca, camel and other animals. These imports of the so-called Class II, or "combing" wools, originated chiefly in Great Britain, Canada and Argentina, and the imports of hair chiefly in Turkey, South Africa, China and South America.[1]

The great wool-growing countries of the world are Australia and Argentine Republic, the annual output of the former aggregating 700,000,000 and that of the latter 400,000,000 pounds. New Zealand, Uruguay and South

[1] Russian camel's hair was included in No. III wools.

frica produce less than the United States but their output mainly a surplus available for exportation.

**Competition Between Domestic and Foreign Wool.** The extent of competition between domestic and imported ool is not so great as their relative volume would indicate. he largest group of imports, or so-called carpet wools, com- tes with but small quantities of domestic wool. But 31 per nt. of the total American clip grades as $\frac{3}{8}$ blood or less, and uch of this is of a quality which does not bring it into direct mpetition with the low-grade carpet wools imported from ina, Russia and India. Nearly 60 per cent. of the coun- y's wool output grades half-blood or higher,[1] and is used in e mills which also purchase imported combing and clothing ool. As relatively little domestic wool, however, competes th the highest grades of Australian wool, a portion of the lothing" wool imported from that country may likewise be garded as non-competitive.

Until December 1, 1913, moreover, when the wool was aced upon the free list by the tariff act of October, 1913, e competition between domestic and foreign wool was modi- d by protective import duties. The import rates imposed unscoured "carpet" wools by the acts of 1897 and 1909 nged from 4 to 7 cents a pound according to whether their lue was less or more than 12 cents a pound.[2] They were w because such wools are in the main not competitive. The tes on unscoured "clothing" wools, however, ranged from to 22 cents per pound according to whether they were shed or unwashed, and those on unscoured "combing" ols were 12 cents. The rates on scoured "clothing" wools re 33 cents, "combing" wools 36 cents,[3] and "carpet" wools cents per pound.

[1] U. S. Tariff Board: Wool and Manufactures of Wool, vol. i, p. )—52 per cent. above half-blood and 17 per cent. half-blood.

[2] Duties here quoted were those on wool not on the skin.

[3] The rates on unscoured wool in other tariff acts since 1860 were follows: 1861 and 1862—50 per cent., 3c. and 9c.; 1864—3c. to . plus 10 per cent.; 1867—3c. to 12c. plus 10 per cent., and washed ss I wools double; 1872—2 7/10c. to 10 8/10c. plus 9 per cent., l washed Class I wools double; 1875—3c. to 12c. plus 10 per cent.,

The ability to import foreign "clothing" and "combing" wools while these protective duties were in effect was due largely to the absolute shortage of domestic wools, and to differences in grade, use and shrinkage. The finest grades of Australian wool are not in direct competition with American wool, being used in the manufacture of the finest fabrics or to mix with domestic wool of somewhat lower grade or different quality. Much foreign wool, however, is competitive and was able to pay the high protective duties largely because the shrinkage of imported "clothing" and "combing" wools i. e., the difference in weight between "raw" or "grease" wool and "clean" or "scoured" wool, is less than that of domestic wools. As compared with a shrinkage of 60 per cent. and 67.5 per cent. in the finer grades of wool produced respectively in the eastern and western parts of the United States, the Tariff Board reported an average shrinkage of 47.6 per cent. and 48.2 per cent. respectively in the finer grades of South American and Australian imported wools. The difference in the case of coarser South American and Australian wools is less pronounced but is also a substantial factor in the wool trade. Since the tariff rates were constructed on the theory that wool shrinks $66\frac{2}{3}$ per cent. in the scouring it was to the interest of wool importers and foreign exporters to select wool of low shrinkage for the American market and to ship the heavier wools to Europe.[1] Natural differences in shrinkage, moreover, were made larger by the practice of "skirting." While American wool usually reaches the market substantially as it comes from the sheep's back, in the case of foreign wools of like character imported under the protective tariff acts of 1883, 1890, 1897 and 1909, the stained or inferior locks were usually skirted or trimmed from the edges of the fleeces.

**Reasons for Extensive Imports of Wool.**—The reasons why, in spite of high tariff rates, the mills of the United States have had to import from 30 to over 40 per cent. of

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and washed Class I wools double; 1883—24c. to 12c. and washed Class I wools double; 1890- Class I—unwashed 11c., washed 22c. Class II, 12c., Class III 32 per cent. to 50 per cent.; 1894—*free*.

[1] U. S. Tariff Board, vol. i, pp. 382-387.

eir raw wool supply, or stated in another way, the reasons
ıy with such protection the American raw wool industry
s not met the needs of the country's mills, lie deeper than
fferences in shrinkage or other immediate trade considera-
ons. Now that imported wool has been placed on the free
t the weight of these causes is even greater than formerly,
cause foreign wool is no longer hampered by raw wool duties
nging from 4 to 22 cents per pound.

1. A fundamental cause has been the use of sheep lands
many parts of the United States for crops which are in-
rently more profitable. The movement of the wool-growing
dustry across the entire continent shows how as the frontier
ıs pushed westward wool had to make way for more prof-
ıble crops. Everywhere east of the Rocky Mountains the
nds which formerly produced much wool are now used
ainly for wheat, corn, oats, hay, vegetables, fruits or other
nilar crops. It found its last main stronghold on the west-
n foothills and mountains, for there the development of
riculture has been less rapid and much land is unsuited to
ops without irrigation.

2. Similar to the foregoing cause is the fact that in many
the sheep-growing regions of the United States, it has been
und more profitable to produce mutton and lamb than to
oduce wool. As formerly mentioned the flocks of the Ohio
d central Mississippi valleys have been largely converted
to meat-producing flocks, and even in Wyoming and Mon-
na there has been much crossing with English mutton
eds. The Tariff Board reported that receipts from wool
the western flocks taken as a whole averaged $1.17 or 45.7
r cent. of the total receipts per head, as compared with
.31 or 58.7 per cent. in Australia and $1.28 or 60.4 per
nt. in South America.[1]

3. The operating costs of production have gradually risen
the United States and are substantially higher than in the
untries which produce wool of similar quality. The labor
sts in the western states where sheep-raising conditions are
e most favorable average about 82 cents per head as com-

[1] Wool and Manufactures of Wool, vol. i, p. 342.

pared with 7 cents in Australia and 23 cents in South America.[1] Forage costs average about 45, 8, and 35 cents per head respectively. As was stated by the Interstate Commerce Commission: "The free range was the basis of the sheep industry in this region, and the free range no longer exists. The better lands are being taken up by farmers. Much is coming under cultivation through irrigation projects. The sheep-man to-day must not only pay for the privilege of grazing, but he is deprived of his winter feeding grounds and must supply artificial food at great expense. In many places the water formerly available has become private property and this necessitates great outlay upon the part of the ranchman. The serious condition which confronts the grower of sheep in this western country is the diminishing quantity and the continually increasing price of land in its various forms; and this is not a temporary but a permanent condition." [2]

Miscellaneous costs, including administration, maintenance repairs and depreciation, taxation, shearing, wool bags, movement of flocks between winter and summer ranges, etc., average about 83 cents per head in the western states, 7[illegible] cents in Australia and 57 cents in South America. Total operating costs per head average about $2.11, .93 and $1.[illegible] respectively in the three competing districts.

The total net charge against a pound of merino wool in the western states is estimated by the Tariff Board to be about 11 cents, in the remainder of the United States about [illegible] cents, and in the country as a whole 12 cents. These cost figures which were based upon the year 1909-1910 indicate that the average price of 24 cents for merino wool paid to growers in the Ohio Valley and 15.9 cents paid to western growers during that year left an average profit of but 3.1 cents per pound to the former and 4.9 or 5 cents to the latter. In [illegible] years prices have been higher, but as stated by the Tariff Board "there is no contingency in sight that can by any p[illegible]

[1] Cost figures as reported by Tariff Board, Wool and Manufactures of Wool, vol. i, pp. 333-377.

[2] 23 d. C. C. Reports, 156.

sibility place domestic growers on an equality in the matter of costs with their competitors in South America, Australia and the Cape Colonies."

**Distribution by Industries.**—The greatest quantity of wool is consumed in the worsted industry, large amounts in the carded woolen and carpet and rug industries, and smaller amounts in the felt goods, hosiery and knit goods and wool felt hat industries. The total consumption in the various industries in 1909 and 1899 are shown in Table No. X.

TABLE X*

CONSUMPTION OF RAW WOOL† IN THE UNITED STATES

| Industry | 1909 Quantity | 1899 Quantity | Per Cent. of Increase‡ |
|---|---|---|---|
| | lbs. | lbs. | |
| Worsted | 387,717,415 | 179,977,936 | 115.42 |
| Woolen | 87,037,951 | 150,200,616 | —42.05 |
| Hosiery and knit goods | 7,068,788 | 17,953,907 | —60.63 |
| Carpets and rugs | 64,135,020 | 51,871,334 | 23.64 |
| Felt goods | 12,409,826 | 9,606,263 | 29.18 |
| Wool felt hats | 1,203,498 | 2,713,374 | —55.65 |

* Thirteenth United States Census, Vol. X (1910), pp. 77, 106, 125.
† In the condition purchased in the United States.
‡ Minus (—) sign indicates decrease.

In the census year 1909 all of the various branches of wool manufactures consumed 559,500,000 pounds of raw wool. In addition much wool in the form of waste and noils [1] passes from the worsted to the carded woolen and other woolen industries; many woolen rags and much shoddy [2] is annually consumed; and there is some trading in tops [3] and in woolen and worsted yarns. In 1909 wool manufacturers also consumed over 39,000,000 pounds of animal hair, hair yarn and hair noils, and 384,500,000 pounds of cotton and cotton yarns.

[1] Short, tangled fibers separated from wool in combing process.
[2] Wool reclaimed from woolen rags.
[3] Continuous strands or ropes of combed wool.

The worsted mills, which are the chief purchasers of woo
are located principally in Massachusetts, Rhode Island, Penn
sylvania, New Jersey, New York and Connecticut, and mor
particularly in Lawrence, Providence and Philadelphia. Ne
York, Pennsylvania and Massachusetts produce nearly 90 pe
cent. of all the domestic carpets and rugs. The carded woole
hosiery and knit goods and felt goods mills are located mainl
in the eastern half of the United States, but are more widel
distributed.[1]

### Central Wool Markets

Although some wool is purchased directly from the grow
ers by the manufacturers and is shipped directly to the mill
the great bulk of raw wool is handled by central wool dealer
or commissionmen who concentrate it at a small number o
large central markets. There are two chief groups of centra
markets east of the Rocky Mountains, those on the Atlant
seaboard and those of the central West.

**The Eastern Markets.**—The former, which are of pre
dominant importance alike in the domestic and import trad
are located principally in Boston, New York and Philade
phia. Boston is the controlling wool market of the country
indeed that market has as much influence over wool price
as Chicago has over the prices of grain, possibly mor
Equipped with huge warehouses and scouring plants, locate
adjacent to the greatest woolen textile district in Americ
favored by a location which enables it to import readily fro
abroad, and by railroad rates which until recently made
difficult for most of the central western markets to compet
in the handling of wool grown on the mountain ranges, Bo
ton has been able to quote regularly and publish daily price
which are largely followed everywhere throughout the Unite

[1] Hosiery and knit goods chiefly in New York, Pennsylvania
Massachusetts, Illinois, Connecticut, New Hampshire, and Rhod
Island. Felt goods chiefly in New York, Massachusetts, New Jersey
Connecticut and Pennsylvania. Carded woolen goods chiefly in Massa
chusetts, Pennsylvania, Maine, Connecticut, New Hampshire, Ne
York and Rhode Island.

States. The wool receipts of Boston in 1912 aggregated 360,602,000 pounds, or 74 per cent. of the entire wool consumption of the United States.

**Central Western Markets.**—There are few central wool markets in the West because the centers of consumption are so largely located in the East, and because Boston, New York and Philadelphia have as compared with most western cities been favored by relatively low through railroad rates. St. Louis and Chicago are wool centers because the through rates from the West "break" at those points; i. e., the through rates to the seaboard are made up of the rates from the local shipping points to these terminals plus the rates from there to the seaboard, thus giving St. Louis and Chicago wool dealers an opportunity to classify and grade, scour and otherwise handle western wool.[1] The wool receipts of Chicago in 1912 comprised 55,778,600 pounds, and those of St. Louis 23,390,000, and their shipments which were higher because of the pulled wool obtained from the packers and slaughterers and the storage of fleece wool were respectively 98,691,600 and 39,819,200 pounds. Omaha has become a wool center because it has to a limited extent enjoyed a transit privilege, i. e., the privilege of stopping western wool and subsequently reshipping it on the balance of the through rate.[2] Western dealers being located in important packing and slaughtering centers are, moreover, able to increase their supply by purchasing "pulled" wool[3] and their middle-western location enables them to handle some of the wool grown in the Mississippi Valley. The Interstate Commerce Commission has recently ruled that transit privileges should be extended to other "intermediate points on a direct line upon payment of 2½ cents per 100 pounds and upon the condition that it applies only to wool originating west of the Mississippi River, which must be kept separate from wool originating at points east of the river."[4]

[1] 19 I. C. C. Reports 535, Dec. 14, 1910; 23 I. C. C. Reports 169, Mar. 21, 1912.

[2] *Ibid.*

[3] Wool removed from skins after slaughter.

[4] 23 I. C. C. Reports 177.

**Pacific Coast Markets.**—Wool grown on the Pacific Slo is largely concentrated at the coast terminals, particularly San Francisco in the south and Portland in the north.[1] Th coast terminals are central wool markets chiefly because their location they are enabled to ship to the eastern marke either by water or rail. For some years they have enjoyed through blanket rate of $1.00 per 100 pounds on baled wo shipped eastward by rail, as compared with typical rates shipments from interior points to Boston, ranging as follow from Spokane, Washington, $2.13; The Dalles, Oregon, $1.4 Boise, Idaho, $2.13; Billings, Montana, $1.75; Cheyenn Wyoming and Denver, Colorado, $1.72½; Ogden, Uta $1.72¼; Albuquerque, New Mexico, $1.93; and Fort Wort Texas, $1.81½. The rates from interior points to the easte markets have recently been reduced by the Interstate Co merce Commission, but they are still in excess of $1.00 p 100 pounds. The rates on sacked wool shipped from Denv and Cheyenne to Boston for example have been reduced fro $1.72½ to $1.32 per 100 pounds, and proportionate reductio were made on shipments from other mountain and far-weste interior points.[2]

**Functions of Central Wool Markets.**—(1) The centr markets are points of concentration where raw wool may stored, classified and graded. (2) They are spot or cash ma kets in which the dealers and commissionmen sell wool manufacturers as it is needed by them either for immedia delivery or delivery at a stated time in the future. (3) A though speculative "futures" are not dealt in as in the gra and cotton trades, there is speculation in wool at some of t central markets. (4) They are shipping and distributi points from which wool is distributed to the mills or to oth wool markets. (5) They facilitate the quoting, publicati and determination of wool prices. (6) Most of them, pa ticularly the three great eastern markets, are scouring cente

[1] Also Los Angeles, Sacramento, Seattle, Tacoma, Everett, A toria, etc.

[2] 23 I. C. C. Reports 151, Mar. 21, 1912; 25 I. C. C. Reports 1 Nov., 1912; 25 I. C. C. Reports 675, Jan. 7, 1913.

While there are a small number of scouring plants in the wool-growing regions, most of the wool—domestic as well as foreign—arrives at the central markets as raw or grease wool, there to be scoured [1] either by the central wool dealers or manufacturers. (7) The Atlantic seaboard markets in addition are wool-importing centers; and (8) in all the large markets, but particularly in Boston, New York and Philadelphia, much wool is consumed in locally established mills.

### The Local Purchasing of Wool

**Purchase from American Growers.**—Wool is sold by the growers either in the "unwashed" condition just as it comes from the sheep's back, or after it has been "washed." In the latter case the sheep are driven into shallow streams or vats and the wool is washed with water so as to remove some of the foreign substances and perspiration adhering to it. In either case the "wool fat" or "grease" is usually not removed until the wool has been sold and reaches the scouring plants of the central dealers or manufacturers.

It is usually shipped from the western ranges in sacks about 7 feet long, 3 feet in diameter and weighing from 250 to 350 pounds, each fleece being tied up with a string and trodden into the sack. Some wool is baled before it is shipped to distant points. Three bales may be tied together and compressed, or the wool may be taken from the sacks and compressed into square or rectangular bales fastened with iron straps. Baling is done mainly by the dealers rather than the growers, and thus far the practice has not become general in the United States. The Interstate Commerce Commission, however, has recently ordered a difference of 15 per cent. in favor of wool shipped from western points in bales having a density of at least 19 pounds per cubic foot.[2]

Although the wool trade is similar to the grain, cotton

[1] Scouring removes the wool fat, perspiration, dirt and foreign substances so as to prepare it for carding and combing.

[2] 23 I. C. C. Reports 166, 176.

and livestock trades in that much of the output is concentrated at central markets, it differs in that the principal central wool markets are not in the interior but on the seaboard, from two to over three thousand miles distant from the western ranges. The methods of purchasing the wool from the growers are various.

(1) The most common method throughout the mountain districts is the direct purchase by central wool dealers. (a) The growers may receive bids from these dealers by mail or telegraph and in that way make a private sale. (b) They may be visited by agents sent out by the dealers to make bids and buy their wool privately. (c) They may sell their clip to the agents of the dealers at public sale on the local wool exchanges which have been established at some of the local wool shipping points. These local exchanges are spot markets with warehouses where growers may bring their wool, list it free of charge, and receive bids on it at given times from the various buyers who congregate there. At some points the buyers who organize the local exchanges offer free warehousing as an inducement to the growers.[1]

The dealers may buy the wool either before or after it has been shorn. In some seasons much wool is contracted for on the sheep's back,[2] although many growers are opposed to this practice.[3]

(2) Wool is also consigned by growers to central commissionmen. Some wool-buying houses may act as dealers and also receive wool on consignment. Commissionmen sell the wool to manufacturers or dealers, the growers paying a commission for their services, the railroad and drayage charges, storage in case the wool is stored in warehouses, and insurance until the wool is disposed of.[4]

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[1] *See* U. S. Industrial Commission, vol. vi, p. 330.

[2] National Association of Wool Manufacturers: The Annual Wool Review (1912), p. 308.

[3] *Ibid.* (1910), p. 307.

[4] U. S. Industrial Commission, vol. vi, pp. 332, 335-336. Commissions in middle western and eastern centers 1 to 1½ cents per pound; at San Francisco ½ cent per pound; Oregon and Washington markets 5 per cent. on small lots and 2½ per cent. on large lots.

(3) Manufacturers sometimes buy direct from the western growers, in any of the ways mentioned in connection with wool dealers. This practice has, however, never become common because there may be numerous grades in the wool clip as offered by the growers. Since the manufacturer desires particular grades it has been to his interest to buy from central dealers and commissionmen who after sorting, classifying and grading can provide the grades which he wishes to use.

(4) As in case of the livestock trade the wool produced in regions where sheep raising is not conducted on a large scale is frequently bought by local dealers. These local dealers may buy on their own account with a view to selling directly to central dealers or manufacturers or consigning it to central commissionmen; or they may act as commission agents or buyers for central dealers or manufacturers, receiving from 1 to 2 cents per pound of wool shipped by them.

(5) Some growers have undertaken to handle their wool coöperatively either at the central markets or locally. Some five hundred western growers have established a coöperative terminal wool warehouse at Chicago in order to handle their wool in the same way that wool is handled by commissionmen and dealers in the East, so as to retain the middleman's profit, discourage the sale of wool on the sheep's back, store their wool until sold, and obtain loans from banks up to two-thirds of its value.[1] Some of the shipping associations or lamb clubs mentioned in connection with the sale of livestock (page 178), moreover, constitute local wool-shipping associations the members of which ship or sell their wool as well as their sheep cooperatively.

**The Purchase of Imported Wool.**—Most of the wool imported into the United States is purchased in foreign wool markets by the agents or buyers of American wool dealers and manufacturers either on public markets or privately. (1) Much wool is bought by American buyers at auction in the public "wool sales" of London, Liverpool, Antwerp, and other European wool centers. At London, for example, Australian,

[1] 23 I. C. C. Reports 172; National Association of Wool Manufacturers, 23 Annual Wool Review (1909), p. 522; *Ibid.* (1910), p. 307.

New Zealand, South African and other wools are catalogued, exposed in warehouses for examination and auctioned in the public salesroom on Coleman Street. (2) Similar public auction sales have been established in various interior and seaboard wool markets in Australia and New Zealand, American buyers appearing particularly at Melbourne and Gellong. Their purchases, however, are less important than those made in London, most of the Australasian wool being imported indirectly. (3) Much foreign wool is purchased privately from foreign dealers and commissionmen, particularly in South America and in the countries which produce carpet and other coarser wools, but to some extent also in the British, European and Australasian markets where public wool sales have been established. (4) Some foreign wool is purchased directly by private sale from foreign growers at the ranches or at the wool centers of the countries in which it is grown.[1]

## Wool Prices

It is at the large central markets of the East, particularly at Boston, where the prices paid for American wool are determined, for it is there that both domestic and foreign wool is concentrated. The *market supply* of wool differs from that of any of the agricultural commodities previously discussed in that it is more largely influenced by foreign production. The imported wool, being purchased abroad in competition with the buyers of many other countries, cannot be bought at prices warranted by the domestic wool output, and consequently the prices of American wool are influenced largely by the foreign as well as the available domestic supply.

The influence of *market demand* is likewise international, for although European mills do not use American wool they are in the market for huge quantities of Australian, New Zealand, South American and South African wool of the grades which compete with American wool in the markets of the United States. The influence of demand and supply upon

[1] *See* Tariff Board, vol. i, pp. 392-394; 468-470.

the price of American wool has for many years differed from the influence of these factors upon American grain, cotton and livestock prices in that domestic wools were protected by high *import duties*. Other domestic farm staples were also protected, but since there was until recently little occasion in their case to import competitive commodities from abroad their prices were not greatly affected by the import duties imposed. American wool prices were, however, not maintained by the full amount of the duties paid on foreign wool because all imported wools are by no means competitive and there are other forces which act independently of the tariff.

The prices of American wool are to some extent influenced by the various *costs of production* previously mentioned, but the international character of the wool trade minimizes their effect, for the lower producing costs of competing Australian, New Zealand, South American and South African wool are also instrumental. *Shipping and selling costs* influence the relative prices at the various markets somewhat, but being deducted from the growers' prices for the most part, they affect producers' prices or profits more largely than the prices paid by the mills. Railroad charges of from $1 to $2 per 100 pounds of wool shipped from the mountain or Pacific states are but a small percentage of territory wool [1] prices which on May 9, 1914, ranged from 50 to 60 cents per pound (scoured basis) in the Boston market, and rates of 52 cents per 100 pounds from Chicago to Boston do not greatly influence the price of unwashed wools of the Ohio Valley selling at 20 to 24½ cents per pound.

Differences in *quality and condition* largely affect the prices paid at the central markets for the various types of American wool. Thus the prices vary according to whether the wool is sold in the unwashed, washed or scoured condition. When Ohio unwashed half-bloods, for example, sell for 24 and 24½ cents per pound the same grade of Ohio washed wool sells for 26 and 26½ cents, and the Montana staple half-bloods which are sold in the Boston market on the scoured basis sell at 53 cents and 54 cents. The quality of the wool

[1] Wool grown in Montana, Wyoming and Idaho.

depends largely upon the percentage of merino blood in the sheep, the geographical region in which the wool is produced, its scouring percentage, the frequency of shearing, i. e., whether 12 or 8 or 6 months' growth, and the absence or presence of any special defects. A glance at the Boston price quotations will show that these considerations variously influence the prices paid at the central markets.[1]

In the West where most of the wool is bought directly by dealers and manufacturers or consigned to central commissionmen, the prices paid to the growers are based upon the current prices paid at the central markets. The buyers deduct from the latter the estimated shrinkage of the wool, railroad charges, packing costs, baling costs if any, drayage, and other handling and buying costs. The growers of the northwestern and southwestern ranges receive from 2 to 4 cents less per pound than the ruling price of the Boston wool market. If consigned to a central commissionman the commission charge and insurance costs, if any, are also deducted from the growers' balance.

In the Ohio and Mississippi valleys where much wool is purchased by local dealers or local commissionmen, and where most growers produce wool merely as a side line, the difference between the growers' and eastern market prices sometimes runs from five to over eight cents per pound because the local middleman's profit as well as the usual costs are deducted. Here, moreover, little attention is given to grade and condition by local buyers, who usually pay a uniform price at any particular time and not infrequently base this price upon the less desirable offerings.[2]

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[1] *See* chap. xiii, pp. 288, 289.

[2] U. S. Tariff Board, vol. i, pp. 560, 590.

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(*See also* references on trade in livestock, pp. 200, 201.

# CHAPTER XI

## THE LEAF TOBACCO TRADE

Another of the great American agricultural staples, the annual value of which exceeds that of the country's wool clip, is leaf tobacco. Since 1909 the crop has ranged from nine hundred thousand to one billion pounds, valued at from $85,000,000 to $122,000,000. India, Russia, Hungary, Java, Japan, Cuba, Germany, Turkey and other countries produce much leaf tobacco, but none grow one-half the crop annually grown in the United States, and none export one-half the quantity annually exported from this country. Leaf tobacco is important both in domestic and foreign commerce, and the trade methods pursued are in many respects distinctive.

### Leaf Tobacco Districts and Types

As in the case of cotton, leaf tobacco is confined to certain districts within which it constitutes the staple agricultural crop. Similarly, from the botanical standpoint many varieties are grown. Commercially, however, leaf tobacco is classified in greater detail than any of the agricultural staples previously discussed because the finished tobacco products made out of the leaf tobacco vary widely and require distinctive qualities in their raw material.

**Commercial Classes and Types.**—The tobacco trade generally recognizes two chief *classes* of leaf tobacco: (1) cigar tobacco and (2) chewing, smoking, cigarette, snuff and export tobacco. These classes which are based upon the adaptation of the leaf tobacco for certain uses are sometimes subdivided more fully, each of the groups comprising the second class being regarded as a separate class; but there is so much over-

lapping in the use of leaf tobacco for the making of chewing, smoking, cigarette and snuff tobacco and for exportation that the twofold classification is more generally accepted.

Leaf tobacco classes are in turn made up of *types* based upon the possession of certain qualities such as color, strength, elasticity, body and flavor, or upon the method of curing such as sun-cured, air-cured, flue-cured or cured by open fires.[1] The standard grouping of leaf tobacco into classes and types, and the quantity of each class and type produced in recent years is shown in table No. XI (page 224).

Leaf tobacco types are further divided into a large and varying number of *grades,* which are based upon different degrees of excellence in quality. Burley tobacco, for example, is commonly assorted by the growers into six grades,[2] and yellow tobacco into from six to fifteen.[3] When repacked, resorted and rehandled by dealers, packers or manufacturers the number of grades may be further increased so as to disclose in detail any differences in quality which the leaf tobacco of any given type may possess.

**Leaf Tobacco Districts.**—As shown in the accompanying map (No. X) and in Table No. XI, the *cigar leaf types* are grown principally in certain districts of Pennsylvania, Wisconsin, New England, Ohio, New York, Georgia and Florida. The great bulk of cigar leaf is grown in the northern states. Eleven counties of Pennsylvania, particularly Lancaster County, which usually produces more tobacco than any other county in the country, grow leaf tobacco which is used largely for cigar fillers, although a small per cent. is used for cigar wrappers and binders.[4] Fourteen counties in southern and western Wisconsin grow leaf tobacco which is used mainly for

[1] J. B. Killebrew and H. Myrick: Tobacco Leaf, p. 46.

[2] Flyings or sand leaves or so-called "spod," trash, lugs, bright leaf, red leaf and tips.

[3] Danville, Va., grades are: A *Wrappers,* (1) common, (2) medium, (3) good, (4) fine, (5) fancy; B. *Fillers,* (1) common, (2) medium, (3) good, (4) fine; C *Smokers,* (1) common, (2) medium, (3) good, (4) fine; D *Cutters,* (1) common, (2) medium, (3) good, and (4) fine.

[4] *See* J. P. Killebrew, Tobacco Districts and Types, in Circular 18 of Bureau of Statistics, Department of Agriculture.

## TABLE XI

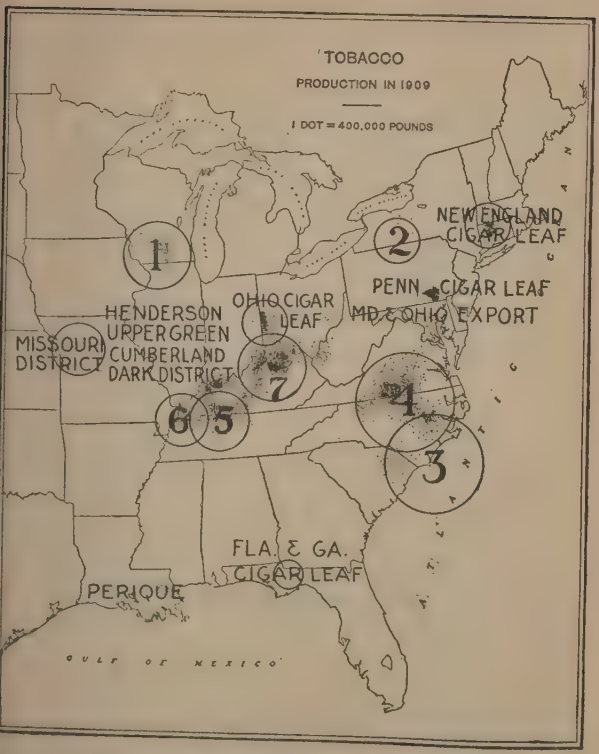
TYPES, DISTRICTS, OUTPUT AND PRICES OF LEAF TOBACCO

| Types and Districts | Production in Pounds (000 omitted) | | | Grower's Prices per L on Dec. 1 (cts.)† | |
|---|---|---|---|---|---|
| | 1899* | 1910* | 1913† | 1910 | 1913 |
| I. CIGAR TYPE: | | | | | |
| New England | 23,778 | 37,205 | 38,295 | 16.1 | 21.0 |
| New York | 13,958 | 5,000 | 4,386 | 8.5 | 12.2 |
| Pennsylvania | 41,503 | 64,500 | 46,680 | 9.3 | 7.5 |
| Ohio—Miami Valley | 48,652 | 56,000 | 37,449 | 8.2 | 11.0 |
| Wisconsin | 45,500 | 35,700 | 50,740 | 7.5 | 12.0 |
| Georgia and Florida | 1,711 | 3,468 | 5,800 | 22.1 | 31.0 |
| Texas | 550 | ..... | ..... | ..... | ..... |
| II. CHEWING, SMOKING, SNUFF AND EXPORT TYPES: | | | | | |
| Burley district | 158,143 | 273,900 | 176,776 | 9.6 | 12.3 |
| Dark districts of Kentucky and Tennessee: | | | | | |
| Paducah district | 51,538 | 74,400 | 58,500 | 7.8 | 7.7 |
| Henderson or stemming district | 88,134 | 89,600 | 44,000 | 7.2 | 7.3 |
| Upper Green River district | 6,700 | 29,750 | 16,848 | 7.4 | 7.0 |
| Upper Cumberland district | 3,862 | 16,500 | 11,400 | 6.8 | 7.3 |
| Clarksville & Hopkinsville district | 75,803 | 91,200 | 80,500 | 8.8 | 9.0 |
| Virginia sun-cured district | 8,354 | 12,150 | 12,500 | 8.5 | 8.5 |
| Virginia dark district | 61,742 | 64,000 | 58,384 | 8.0 | 7.0 |
| Bright yellow district: | | | | | |
| Old Belt — Virginia and North Carolina | 108,450 | 143,500 | 165,600 | 10.4 | 18.5 |
| New Belt — North Carolina and South Carolina | 83,762 | 63,250 | 117,150 | 10.0 | 17.9 |
| Maryland and Eastern Ohio Export | 27,224 | 27,710 | 20,976 | 7.7 | 9.1 |
| Perique—Louisiana | 102 | 275 | 270 | 25.0 | 25.0 |
| Scattering | 18,647 | 14,985 | 7,260 | .... | .... |
| Total | 868,113 | 1,103,415 | 953,734 | 9.3 | 12.8 |

* U. S. Census returns.
† U. S. Department of Agriculture Estimates.

cigar binders, and fillers, Wisconsin being known as the binde state because 75 per cent. of its crop is used for that purpose Eleven New England counties, particularly those of the Connecticut and Housatonic valleys, produce cigar wrappers binders and fillers. A larger share of the New England lea is used for wrappers and for that reason its value is usuall

MAP X.—LEAF TOBACCO DISTRICTS




Production Data as in Thirteenth U. S. Census

1. Wisconsin Cigar Leaf.
2. New York Cigar Leaf. .
3. Bright Yellow New Belt.
4. Va. Sun Cured; Va. Dark; and Bright Yellow Old Belt.
5. Clarksville and Hopkinsville Dark.
6. Paducah Dark.
7. Burley Leaf.

higher than that of the tobacco grown in other northern states. The tobacco grown in fourteen counties of the Miami Valley in Ohio as in the case of Pennsylvania is used mainly for cigar fillers. That grown in the eight counties which comprise the Onondago and Big Flats tobacco districts of New York is similar to the New England crop but is of somewhat inferior average quality and less of it is used for cigar wrappers. The highest type of domestic cigar tobacco is grown in the five tobacco counties of Georgia and Florida, it being used largely for cigar wrappers.

Of far greater importance than the cigar leaf districts are the large districts in Kentucky, Virginia, North Carolina, Tennessee, South Carolina, Maryland, West Virginia and southern Ohio which produce the chewing, smoking, snuff, cigarette and export types. Their value per pound is on the whole less than that of the cigar types, but their total quantity and value are far in excess. Indeed Kentucky alone produces one-third of the country's entire leaf tobacco crop.

The *burley district* extends throughout the central and eastern parts of Kentucky and certain counties in Ohio, Indiana and West Virginia. It produces the so-called "burley" leaf, much of which is used in the United States to manufacture chewing and smoking tobacco and cigarettes and some of which is also exported to foreign markets.

The principal *dark districts* of Kentucky and Tennessee which produce the various types of "dark" leaf are five in number. The leaf grown in the Paducah district of western Kentucky and Tennessee, instead of being air-cured as in the burley and cigar leaf districts, is cured by the open-fire process. It is largely exported to foreign countries, although some of it is retained for the manufacture of snuff and cheap cigars, chewing and smoking tobacco. To the west and northwest from this district in Kentucky and Indiana is the Henderson district, also called the "stemming" district because most of its crop is exported to Great Britain in the form of "strips" which consist of the leaves after the stem or midrib has been taken out or "stemmed." The crop is cured either by the air-curing or open-fire processes and nearly all of it is shipped

abroad. The better grades of dark tobacco grown in the upper Green River and Upper Cumberland districts of Kentucky, where the air-curing process prevails, are used for chewing tobacco, and the lower grades for smoking tobacco and for exportation. The output of the Clarksville and Hopkinsville district of Tennessee which is cured by the open-fire process, is prepared mainly for the export market, and as in the case of the Paducah district much is shipped to Great Britain in the form of strips.

The crop of the *"sun cured" district* of northern and central Virginia which is partly cured in the sun and partly air-cured, is used largely in the United States in the manufacture of chewing and smoking tobacco. That of the *dark district of Virginia,* located in the southern part of the state, on the contrary is cured with open wood fires, and most of it is exported. Smaller quantities are used in the United States to make cheap cigars, snuff, smoking tobacco, plug fillers, and some of highest grades for plug wrappers.

The *bright yellow district* divides itself into two belts. The "Old Belt" which includes various counties in the southern part of Virginia and the northern part of North Carolina, cures its crop by the flue-curing process. Some of it is exported but most of it is retained for the manufacture of chewing and smoking tobacco. The crop of the "New Belt," which is located in the eastern and southern part of North Carolina and the northern part of South Carolina, is also cured by flue-curing process, but in this district the leaves are "primed," i. e., gradually cut from the stalk in the field as they ripen. Some of the bright yellow tobacco of this belt is exported, but most of it is used in the domestic manufacture of cigarettes and smoking tobacco.

In certain counties extending through Maryland, West Virginia, and eastern Ohio the so-called *"export tobacco"* is produced. This is a very "heavy shipping" tobacco which is cured either by the air-cured or open-fire methods, and most of it is exported to France, Holland and Germany. Small quantities are retained for cheap domestic cigars and smoking tobacco.

The total crop of *perique tobacco* is but small and has in recent years declined, nearly all of it being grown in St. James Parish, Louisiana. It is of a high quality, however, bringing prices as high as those paid for the cigar tobacco grown in Georgia and Florida, and is known for its distinctive qualities. After being air-cured, the leaves are stemmed, made into loose twists, packed into boxes and subjected to pressure. The twists are unrolled to permit absorption of juices, retwisted and recompressed many times until finally cured. Formerly it was sold in rolls or "carrots" wrapped in cotton cloth and wound with rope and weighing from one to four pounds each, but more recently the crop has been packed into second-hand whiskey barrels each holding about five hundred pounds. Perique carrots were long regarded as a form of currency accepted by local merchants in exchange for goods and in payment of debts.[1]

## Methods of Selling Leaf Tobacco in the United States

The methods of selling the crops of the cigar leaf districts differ from those prevailing throughout the southern states where the heavier types are mainly grown.

**Sale of Cigar Types.**—There are no organized markets for cigar leaf tobacco, which is mainly grown in the northern states. Nearly all of it is sold by private sale to packers, dealers or cigar manufacturers. (1) The most common method is to sell privately to so-called "packers," whose agents sometimes purchase a grower's crop in the field before it is harvested but more frequently make bids at the tobacco barns. After the tobacco is cured the growers strip the leaves from the stalks, sort them into grades of quality, tie them in bundles of about forty pounds each, wrap them in heavy paper and deliver them to the packer's local warehouse or ship them to his headquarters which may be in New York, Chicago or other cities. The packer's services are various: (a) he acts as a local dealer who buys leaf tobacco from the growers; (b)

[1] Killebrew and Myrick, p. 376.

he regrades, ferments and packs it into cases of from 300 to 350 pounds each; (c) he carries stock for many of the small local cigar manufacturers operating in the cigar leaf districts; (d) he sometimes sells to local manufacturers on credit, thereby acting as a banker, and (e) he sells much tobacco by sample to the wholesale dealers or jobbers and cigar manufacturers located throughout the United States.

(2) Cigar leaf is sometimes privately sold by the growers direct to manufacturers. The American Cigar Company, for example, has leaf-buying stations at Hartford and Windsor, Connecticut; Fulton, New York; Dayton, Ohio; Lancaster, Pennsylvania; and Brodhead, Deerfield, Edgerton, Jonesville, Madison, Sparta, Stoughton, Viroqua and Watertown, Wisconsin; and has plants at various places for the rehandling, packing and storage of cigar leaf tobacco.[1]

(3) Some cigar leaf is privately sold by the growers to the wholesale dealers or jobbers who may act as packers as well as jobbers. The jobber's supply of cigar leaf, however, is mainly obtained from the packing concerns.

(4) Because of its nearness to the dark, burley and export leaf districts, a portion of the cigar leaf of the Miami Valley in Ohio is publicly sold on the auction market at Cincinnati, but this is an exception to the usual methods of selling the cigar types.

The system of middlemen is expensive, the original market value of the cigar leaf being advanced from 40 to 80 per cent. by the time the crop reaches the manufacturers. It prevails largely because, in contrast with other branches of tobacco manufacturing, cigars are made by hundreds of small cigar makers who have insufficient capital to purchase direct from the farmers, send agents to organized markets, or do their own grading, fermenting, packing and storing. The growers are, however, not without redress as regards the prices which they receive. The very absence of control over the cigar-manufacturing industry by a few large concerns has assured a certain degree of competition between cigar leaf

[1] U. S. Bureau of Corporations: The Tobacco Industry, Part I, p. 297.

buyers. The system of local cigar manufacture in small factories and households such as prevails in the Pennsylvania district, moreover, enables the grower in case of low prices to undertake the making of cigars on his own account or for a local manufacturer. Growers may also if necessary pack their crop for storage or for shipment to markets located at a distance. Their main difficulty lies in the absence of definite knowledge as to current prices for cigar leaf, neither the buyers nor the individual growers being inclined to disclose the real price for which the crop changed hands.

**Sale of Smoking, Chewing, Snuff and Export Leaf.**—(1) In most of the southern tobacco districts a large part of the leaf tobacco crop is sold at auction in public tobacco warehouses. In contrast with the northern leaf tobacco districts, these public warehouses located at large markets such as Louisville, Cincinnati, Clarksville, Hopkinsville, Richmond, Danville and Baltimore and at numerous smaller towns in the growing districts constitute an organized leaf tobacco market.

The auction sales are conducted in two general ways: (a) by the "loose-floor" method, and (b) by the "prized" or "inspected leaf" method. The former is particularly important in the Virginia sun-cured, Virginia dark, and bright yellow districts, although it has also been established to some extent in the Clarksville and Hopkinsville and Paducah dark districts, and in the burley tobacco districts. Auction sales of prized or inspected leaf tobacco prevail more largely in the large general tobacco markets at Louisville, Cincinnati and Baltimore where many types of leaf are sold, and in the Paducah, Henderson, Upper Green River and Upper Cumberland dark districts, the burley district and the Maryland and East Ohio export district, the latter shipping most of its prized tobacco for sale in Baltimore warehouses. Some prized tobacco is also sold at auction in Virginia and the Carolinas.

Under the loose-floor method, the growers, after curing the leaves, stripping them from the stalk and tieing them into small bundles containing from five to twenty leaves—the size of the bundles differing in the various districts—or

lacing them in sheets without tieing them as is sometimes one in the "New Belt" of the bright yellow district, haul hem to the nearest auction warehouse. The warehouses re equipped with sufficient floor space and light to permit of he ready examination of the tobacco leaves, when placed in ong piles on the floor, by the various buyers who congregate here. Meanwhile in moving the tobacco from the farmer's vagons to the assigned floor space it is weighed and tagged vith cards showing the warehouse number, weight of pile nd name of the owner. It is then "auctioned off" to the ighest bidder by a tobacco auctioneer, the owner, however, eserving the option of rejecting the bids and selling his crop rivately or at a subsequent auction. The usual warehouse osts are a weighing charge of 10 to 15 cents per pile, an uction fee of 10 to 15 cents per 100 pounds, or a set fee of 5 cents in case the pile exceeds 100 pounds in weight, and commission of 2½ per cent. on the proceeds of the sale for he general service of the warehouseman.[1]

Under the prized or inspected leaf method, the tobacco is elivered to the warehouse by the grower in hogsheads hold- ng—variously in different districts—from 500 to 1,800 ounds, or, as is sometimes done in the bright yellow districts, a so-called "tierces" holding from 250 to 600 pounds. When o packed in hogsheads or tierces the tobacco is said to be prized." Its sale at public auction is subjected to control by he states and by boards of trade or tobacco exchanges, so as o insure fair dealings between buyers and sellers. As is ated by Messrs. Killebrew and Myrick in their standard work n *Leaf Tobacco:*

> It is the purpose of the law that these regulations will so over every case as to make it unnecessary to carry disagree- ents to the courts. Provision is made that no warehouseman, any one of his employees, is allowed to participate in the rofits or losses from the purchase or sale of any tobacco in the arehouse with which he may be connected. The inspectors f tobacco are either appointed by some State authority, or ected by a tobacco board of trade. In Tennessee, the ware-

[1] Killebrew and Myrick, pp. 274-275.

housemen are created inspectors by law, but they may appoin inspectors, or samplers, for whose acts the warehousemen ar held responsible by the regulations of the tobacco board o trade. These deputy inspectors are elected by the vote of th warehousemen and buyers, who have an equal voice in thei selection. In cases where differences and claims arise, thes are settled by an arbitration committee. The latter consist usually of three persons, who are appointed by a committee o the board of trade, one member of which is a warehousema and another a buyer, these two selecting a third to complet this committee. Provision is also made for a committee o appeal, which has the power to confirm or reject the decisio of the committee of arbitration. The warehouseman is oblige to keep his house in good condition and repair, the floors fitte with platforms, or skids, which will elevate the hogsheads a least four inches.

Provision is also made for the penalizing and detection o false packing, the bonding of inspectors, and a lien on th tobacco to cover warehouse charges and fees.

The auction sales of prized tobacco are based upon sam ples which are drawn by official inspectors, the hogshead o tierce being opened, inverted and then lifted from the to bacco. To obtain the samples the solid column of leaves whic is thus exposed is divided at various places each of which i known as a "break," and for this reason the auction sale are commonly referred to as tobacco "breaks." To the sam ples are attached and sealed labels or tags showing the nam of the warehouse and its number, the name of the seller an inspector, the gross weight, date of inspection, and in case o reinspection also the date of reinspection and newly ascer tained gross weight. The warehouse proprietor also issue a tobacco "note" or manifest bearing the date of inspectio or reinspection, old and new weights, name of warehous and growers' marks or numbers. This "note" is a negotiabl receipt which changes hands whenever the tobacco is sold an requires delivery when finally presented for shipment. Shoul the owner desire to store his crop for sale at some futur time a special storage receipt is issued by the warehouse man.

Samples are auctioned off to the highest bidder, the bids usually being taken at advances of 10 cents per 100 pounds up to $6, after which 25 cents is the minimum advance up to $25, and then 50 cents per 100 pounds. The growers, as in the case of loose-floor sales, may reserve the option of rejecting any bid offered. Frequently as many as five hundred sales are made in a morning, all of which must be cashed within a specified time. The grower receives his pay at the warehouse office at the price accepted less warehouse charges, which usually vary from 20 cents to $2.00 according to the quantity sold, inspection and sampling fees ranging from 40 cents to one dollar per hogshead (including cooperage and nails), auction fees ranging from 12½ cents to 25 cents per sample sold, a commissionman's fee of 2½ or 3 per cent., and varying storage and insurance charges if stored for a longer time than say four months. If shipped to the warehouse by rail the railroad charges are also deducted from the balance remitted to the grower.

(2) Leaf tobacco in the southern tobacco districts is also sold in various ways by private sale. (a) Many growers sell the loose leaves as stripped from the stalks at their barns, for delivery to buyers' prizing houses. (b) They sometimes sell loose leaf tobacco privately at the public warehouses. (c) They may sell prized tobacco at their barns, or (d) privately at the public warehouses, and (e) some leaf tobacco, also, particularly in the Clarksville and Hopkinsville districts, is prized for the farmers by hired prizers, and is stored in private warehouses, to be finally sold by private salesmen on the basis of samples.

**Southern Leaf Tobacco Markets.**—The markets in which the southern growers sell their leaf tobacco crops and in which much leaf tobacco is also resold by dealers and other middlemen are too numerous for complete enumeration. Many of them serve but small parts of a tobacco district, but nevertheless are of importance alike to growers and buyers. Among the largest markets, however, are Louisville, Henderson, Paducah, Owensboro, Hopkinsville, Lexington and Mayfield in Kentucky; Cincinnati, Ohio; Clarksville, Spring-

field, Nashville, and Paris in Tennessee; St. Louis, Missouri; Richmond, Danville, Petersburg, Lynchburg and Farmville in Virginia; Durham, Winston-Salem, Wilson, Rocky Mount and Oxford in North Carolina; and Baltimore, Maryland.

**Southern Leaf Buyers.**—Owing to the large degree of consolidation in those branches of tobacco manufacturing which consume the various heavy types of leaf grown in the South, the number of buyers bidding for crops is smaller than it was in the eighties and early nineties. Various groups of buyers, however, congregate regularly at the southern markets.

Many of the buyers represent manufacturers of chewing, smoking, snuff, cigarette, stogie, and cheap cigars. The larger manufacturing concerns, particularly, maintain special leaf-purchasing departments with headquarters at the leading markets and branches and buyers throughout the surrounding districts. Some of the buyers represent dealers who prize, regrade, rehandle, resell and ship tobacco to manufacturers and exporters, or specialize in leaf tobacco strips which are ultimately shipped to the English market. The dealers may sell their supply either privately or on the large public auction markets.

At many leaf markets, especially those which handle the export, dark and burley types, the agents of exporting concerns are important buyers. Exporting of leaf tobacco is conducted by two principal groups of concerns. (1) Private exporting companies ship to Great Britain and smaller quantities to Germany, Holland, Belgium, Denmark, Norway, Sweden, Africa, Australasia, Japan and the foreign countries of North and South America. The Imperial Tobacco Company, for example, buys and exports great quantities of American tobacco to Great Britain, and the British-American Tobacco Company to other foreign countries. (2) So-called government "regies" have buyers in the United States and ship leaf tobacco to France, Italy, Austria and Spain. They represent the government monopolies which control the tobacco trade in those countries.

## Foreign Trade in Leaf Tobacco

**Leaf Tobacco Exports.**—The exports of unmanufactured obacco just referred to have since the close of the nineteenth entury comprised from 288- to 380,000,000 pounds annually r over one-third of the country's annual crop. So important re they that one of the general types of leaf is expressly nown as export tobacco, and in addition much Kentucky and 'ennessee dark, burley, Virginia dark and bright yellow to- acco is shipped abroad. The principal foreign markets, in heir usual order of importance, are the United Kingdom, ermany, Italy, France, Holland, Canada, Spain, Belgium, ustralia, Africa and Japan.

**Leaf Tobacco Imports.**—Though the largest producer and xporter of leaf tobacco in the world, the United States never- heless imports each year from 25- to 55,000,000 pounds of oreign leaf. The imports consist mainly of cigar fillers, inders and wrappers from Cuba, cigar wrappers from Su- atra, and cigarette leaf from Turkey. They comprise to- acco types which are not grown in the United States or are ot produced in sufficient quantities to meet domestic needs. ome of the foreign leaf is imported directly by American anufacturers, the largest of which maintain foreign buying gencies; some is imported by importing dealers, and still her is shipped to the United States from foreign plantations wned and operated by large American tobacco manufac- rers.[1]

## Leaf Tobacco Prices

Although in general the prices paid to the growers of af tobacco in the United States vary from year to year cording to the *commercial supply and demand*, these forces ave not always operated with exactness. In the domestic gar leaf trade where there are no organized public markets d each sale is the result of private—often secret—bargain-

[1] Bureau of Corporations: The Tobacco Industry, Part I, pp. 255, 8-302.

ing, the grower has no definite price index as a basis for in
telligent judgment. The growers of the leaf tobacco used fo
other purposes than cigar manufacture have the advantage o
numerous organized auction markets where prices are pub
licly quoted. There is no single or small group of southern
tobacco markets, however, which stands out as prominently a
Chicago does in the grain and livestock trades; New Orlean
New York and Liverpool in the cotton trade; or Boston i
the wool trade. The organization of the American Tobacc
Company and its subsidiary manufacturing and exportin
companies has moreover at times restricted the freedom o
competition to some extent, for it naturally reduced the num
ber of independent buyers. The decline in prices during th
years 1899 to 1903 was doubtless due in part to the great in
crease in the crop during those years, but among the growe
there was a widespread feeling that it was largely due to th
dominant position of the tobacco combination. They there
upon formed growers' associations in the various districts
the members of which refused to sell their crop at the prevai
ing prices, and restricted production. Much leaf tobacco wa
stored in warehouses and became the basis for advances mad
by New York as well as local banks. The total annual cro
declined from 816- to 660,000,000 pounds between the year
1903 and 1904 and did not again reach the level of the forme
year until 1909. The effect of this was to gradually rais
the average grower's price from 6.8 cents per pound on De
cember 1, 1903, to 10.3 cents on December 1, 1908.[2]

The price effect of supply is exerted largely by domesti
leaf, the leaf imports from abroad being mainly non-com
petitive. Foreign wrapper tobacco and other foreign lea
tobacco when mixed or packed with more than 15 per cen
of wrapper tobacco is obliged to pay an import duty of $1.8
per pound if unstemmed and $2.50 per pound if stemmed

[1] Dark Tobacco Growers' Association of Kentucky; Dark Tobacc
Growers' Association of Tennessee; Burley Tobacco Growers' Asso
ciation of Kentucky; Maryland Tobacco Growers' Association; Mu
tual Protective Association of Bright Tobacco Growers of Virginia
North Carolina, etc.

[2] Estimates of U. S. Department of Agriculture.

nd the lowest duties on foreign filler and other classes of leaf bacco range from 35 to 50 cents per pound.[1] The influ-nce of demand, on the contrary, is international, over one-hird of the crop being annually exported.

Leaf tobacco prices, more so than those of most other arm staples, also vary greatly according to *quality and use.* s was shown in Table No. 1 the average prices of cigar leaf xceed those of tobacco used for other purposes. Cigar wrap-ers, moreover, sell at higher prices than binders, and binders igher than fillers. So, likewise, the bright yellow types sually sell for higher prices than burley leaf, and burley af higher than the dark and export types. While much wool, vestock, cotton, and to some extent even grain, is not graded ntil after it is sold by the farmers, the tobacco growers emselves usually grade their crop before selling it.

*Local hauling, shipping and marketing costs* affect leaf bacco prices and grower's profits in the same manner that milar costs influence the tobacco prices or grower's profits other farm products. Leaf tobacco being an intrinsically luable commodity, however, the aggregate influence of haul-g and shipping costs is relatively smaller than in the case commodities such as grain, hay or potatoes. The United ates Department of Agriculture reports the average costs hauling from the farms to local markets or shipping points be about 10 cents per 100 pounds, and when shipped to e larger markets by rail the freight charges from the local ipping points usually do not exceed 15 or 25 cents per 100 unds. Marketing costs including commissions, warehouse arges and other costs previously mentioned are, on the ntrary, a relatively important item in leaf tobacco prices growers' profits.[2] When the leaf tobacco is sold in hogs-ads, tierces or other containers the cost of such containers comes an additional item, and frequently the costs incurred the packing house which stands between the grower and nufacturer in so many instances affect either the price re-

[1] Tariff Act of Oct. 3, 1913, Schedule F.

[2] For cost comparisons *see* United States Industrial Commission; tribution and Marketing of Farm Products, vol. vi, pp. 310-319.

ceived by the grower or that paid by the manufacturer. Th commercial costs are lowest when the manufacturer purchas directly from the grower, and highest when the crop is ma keted through packers, wholesale dealers, or jobbers, exporte or other middlemen, each of whom incurs costs and deman a profit for the services which he renders.

The manner in which grower's production costs affect le tobacco prices and grower's profits does not differ essential from the effect of such costs in other agricultural trades, a the influence of general factors such as gold production described in Chapter XVII.

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# CHAPTER XII

## THE MARKETING OF FRUIT

The fruit trade of the United States comprises so many varieties of fruit, and so many growing districts, markets and branches of activity that space forbids the discussion of many phases of this trade. Viewed from the standpoint of the organization of commerce, it will be necessary to describe only the distinguishing features of the fruit trade, chief among which are the methods of marketing the crop and the unusual amount of coöperation which has been developed among fruit growers. Much of the ensuing discussion applies equally as well to the trade in vegetables and other farm produce, but for purposes of brevity it will be confined to the fruit trade.

### The Fruit-Growing Districts

The fruit crop is commonly divided into five primary classes or groups: (1) orchard fruits, (2) small fruits, (3) grapes, (4) citrus fruits and (5) non-citrus tropical and subtropical fruits. Of each there is a large number of varieties, and most of them are produced in widely separated growing districts.

**Orchard Fruits.**—By far the largest group of American fruits consists of the so-called orchard fruits—apples, peaches and nectarines, pears, plums and prunes, cherries, apricots, quinces and others of less importance. As indicated in Map No. XI these fruits taken as a whole are grown in many parts of the country. So generally are they produced that the census returns of 1909 showed the amazing total of 214,000,000 bushels. In California, New York, Michigan, Pennsylvania, Missouri, Kentucky, Iowa, Ohio, Virginia, Tennes-

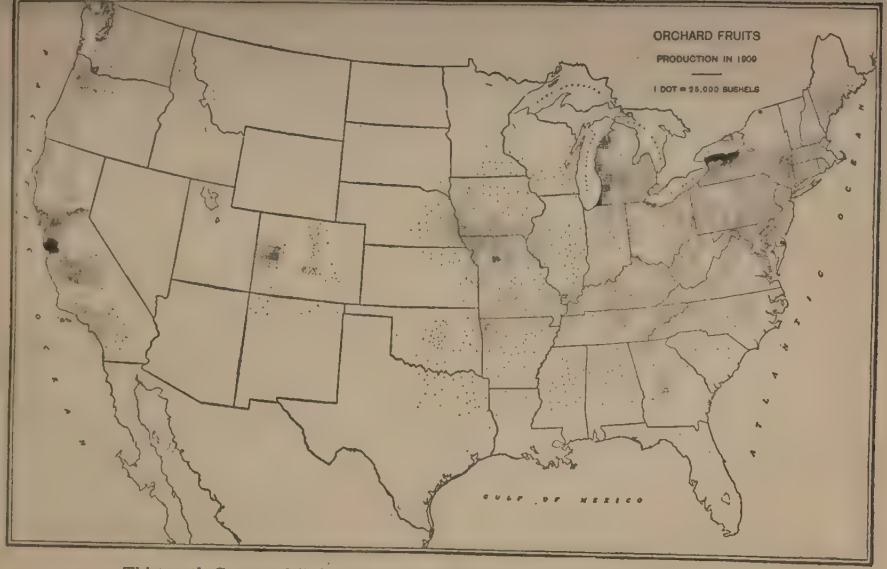
sce, North Carolina, Illinois, Indiana, West Virginia, Colorado, Arkansas, and Oregon many growers make a special business of raising orchard fruits.

The orchards yielding the 140- to over 175,000,000 bushels of apples annually grown in the United States are widely scattered, but three chief belts are discernible: (a) The old-time "apple belt" which has for many years produced heavy apple crops extends throughout New York, New England, Pennsylvania, Ohio, Indiana, Kentucky, Tennessee, Michigan and the Virginias. (b) The apple orchards of trans-Mississippi Valley belt, including chiefly the Ozark territory of southern Missouri and northern Arkansas, southwestern Iowa, eastern Nebraska and Kansas, are newer but now yield heavy crops. (c) Still more recently the apple orchards of the Pacific Coast—California, Oregon and Washington—have shipped many carloads to eastern and middle-western markets; indeed few apples have been more widely advertised than those of the Hood River Valley of Oregon. A fourth apple district is gradually being developed in the Rocky Mountain states. Colorado, Idaho, Utah and Montana already shipping appreciable quantities to outside markets.

Peach growing is somewhat less general, but is likewise spreading over a greater area than in the past. For many years the commercial crop reaching the great fruit markets of the Middle West and East came largely from three districts, Georgia, Michigan, and California, but it is noticeable that many peaches have in recent years entered the trade from the orchards of Indiana, Illinois, New York, Ohio, Washington, Colorado, Utah, Arkansas, Missouri, Texas and from all the states south of the Ohio and Potomac rivers.[1]

**Small Fruits.**—The country's total output of so-called small fruits comprised 426,500,000 quarts in the census year 1909. They include strawberries, blackberries, raspberries

[1] Other orchard fruits are grown chiefly as follows: pears in Cal., N. Y., Mich., N. J., Pa., Ohio, Md., Ore. and Wash.; plums and prunes in Cal., Oregon, Wash., N. Y., Pa. and Mo.; cherries in Cal., Pa., Ind., Mich., Ohio, Ore., Neb., Mo., Ill., Iowa and Wash.; apricots in Cal.; quinces in N. Y., Ohio, Pa. and Cal.




Thirteenth Census of U. S., 1910.—Department of Commerce, Bureau of Census

cranberries, currants, gooseberries and other varieties of berries. Their production is widely scattered, but the leading districts are in New Jersey, New York, Massachusetts, Michigan, California, Maryland, Ohio, Missouri, Pennsylvania, Delaware, Tennessee and Washington.

**Grapes.**—In contrast with the output of orchard fruits which increased but slowly during the census decade 1899 to 1909, and that of small fruits, which declined somewhat, the country's grape crop advanced from 1,301,- to 2,571,000,000 pounds. California's output of 1,980,000,000 pounds in 1909 exceeded the grape crop of the entire United States of ten years earlier, and in the same year 253,000,000 pounds were grown in New York. Though vineyards are not uncommon in eastern states such as Pennsylvania, New Jersey, Delaware, Maryland, Virginia, and North Carolina; and in Illinois, Indiana, Missouri and Iowa, ninety-three per cent. of the total commercial crop is grown in but four regions: (1) California, (2) western New York, (3) southwestern Michigan, and (4) northern Ohio. The use of grapes for the making of grape juice and raisins, the irrigation of large areas in California and the development of large eastern markets for fresh grapes have nearly doubled the crop during the last decade.

**Citrus Fruits.**—The fruits known as "citrus" to distinguish them from "deciduous" fruits, include principally oranges, lemons and grapefruit.[1] Their production in the United States is confined very largely to California and Florida, and during the decade 1899 to 1909 the annual crop advanced from 7- to 23,500,000 boxes.[2]

**Non-citrous Tropical and Sub-tropical Fruits.**—Though the citrus fruits constitute the main group of tropical and sub-tropical fruits grown in the United States, various non-citrus fruits of that type are grown. Figs and olives are

[1] Most of the orchard fruits are deciduous and are so-called because the trees producing them shed their leaves each season.

[2] 1909: Domestic orange crop—total 19,487,481 boxes: California 14,456,180, and Florida 4,852,967. Lemon crop—total 2,770,313 boxes: California 2,756,221, and Florida 12,367. Grape fruit—total 1,189,250 boxes: California 122,515, and Florida 1,061,000.

grown mainly in California; pineapples, mangoes and bananas in Florida; guavas and persimmons in Florida and California. Small quantities of loquates, pomegranates and dates are also included in this group of fruits.

## Importation of Fruits

In addition to the great quantities of domestic fruits grown in the United States, foreign fruits and nuts to the value of from $27,- to $41,500,000 are annually imported from abroad, and smaller quantities from the country's island possessions. The imported fruits consist mostly of tropical and sub-tropical varieties not grown on a sufficiently large scale in the United States. The largest item in the foreign trade consists of bananas imported from Central America, the West Indies and Colombia. Sixty per cent. or more are imported by the United Fruit Company, a large commercial concern which cultivates nearly 222,000 acres of fruit lands in the tropics and buys additional fruit from other growers; which operates over eighty vessels to carry fruit for its own account, general freight for the public, and many passengers; and which operates ice plants, hotels and hospitals, and in many ways is a prime factor in the commerce of the West India and Caribbean countries.[1] The bananas and other fruits which it imports are mostly sold on the large auction markets of the Atlantic and Gulf ports of the United States and thence distributed throughout the country. Other foreign fruits include currants imported mainly from Greece, Asiatic Turkey and Italy; dates and figs from Asiatic Turkey and other countries in Asia; grapes from Spain; lemons from Italy; olives from Spain and Greece; oranges from the West Indies, Italy, Mexico, Japan and England; pineapples from Cuba; and raisins and other dried grapes from Asiatic Turkey and Spain.

[1] Proceedings of House Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations (1912), vol. 1, pp. 711-731.

## Preparation for Market

**Fruit Grading.**—As in the case of other farm product fruit must be graded in order to be properly marketed. The grading requires careful sorting of the fruit with three chief factors in mind: (1) uniformity, (2) relative freedom from injury resulting from handling, picking, storm, disease, insects or otherwise, and (3) agreement with the brand mark on the fruit package. Uniformity, the principal grading as well as selling consideration, refers mainly to size, color, and shape, which together represent appearance. It is a well known market axiom that an apple of good appearance although of relatively inferior taste and quality is more easily sold in the large wholesale markets than one of superior taste and quality but inferior appearance.

Fruit is sometimes regraded and repacked at the wholesale markets by dealers or commissionmen, but as in the case of leaf tobacco it is usually graded locally. It may be graded either by the local dealers who buy much fruit from the growers, or by the growers before they dispose of their crop. In the latter case it may be graded by the individual growers or by growers' coöperative associations, the tendency in many fruit districts being toward direct action by such associations or by the individual growers subject to association rules and inspection.

Though the formation of coöperative growers' associations leads to a degree of uniformity within given fruit districts throughout the country as a whole there is great lack of uniformity in fruit grading. Many apple shippers for example sort their crop into three grades—selects, firsts and culls; but others grade them into four groups—selects, firsts, seconds and culls. Moreover, throughout the country as a whole there has been no general understanding as to the exact meaning of the various grades of fruit. More has in this respect been done in the grading of apples than that of other fruits, for the National Apple Shippers' Association has since 1900 endeavored to enforce upon its members two "standard"

grades (Nos. 1 and 2), and in 1912 Congress enacted a statute, effective July 1, 1913, fixing three "standard" grades for apples shipped in interstate commerce. All of the standard grades comprise well-grown, hand-picked apples of normal shape, of one variety and practically free from defects, the total in a barrel being not more than 10 per cent. below the specifications of the law,[1] and other apples may not be shipped under standard grades. The difference between the three standard grades lies mainly in the size of the apples, No. 1 having a minimum diameter of 2½ inches, No. 2 not less than 2¼ and No. 3 not less than 2 inches.

**Fruit Packing.**—The grading of fruit is inseparably connected with its packing. One of the abuses of the trade has been the occasional false packing of fruit by placing different grades in the same package, attaching misleading brands or marks, using undersized packages or failing to properly fill the packages. There has also been, and to some extent still is, lack of uniformity in the kind and capacity of fruit packages used.

Much improvement has been made in the matter of packing by the voluntary action of growers, growers' associations, and dealers. Fruit shipped from given districts is now commonly packed in standard packages, there being standard apple barrels and boxes, berry boxes and crates, grape baskets, Georgia, Michigan and Delaware peach baskets, etc.[2] Statutes have been enacted in many states, prescribing the minimum dimension of the packages, and penalizing underfilling and misbranding. The federal apple grading law of 1912, likewise, prescribes the standard dimensions of an apple barrel, requires branding according to the actual grade of the contents and penalizes misbranding.[3]

The packages of fruit which are honestly graded and packed and of superior quality are usually marked with the

[1] Act of Aug. 3, 1912.

[2] F. A. Waugh: Fruit Harvesting, Storing and Marketing, pp. 73-91.

[3] Standard dimensions: length of stave 28½ inches; diameter of head 17⅛ inches; distance between 26 in.; circumference of bulge 64 in. (outside); cubical contents 7,056 cubic inches.

trademarks or brands of individual growers or shippers or of growers' associations. Many such marks are well known in the large wholesale markets and constitute valuable trade assets.

**Pre-cooling.**—Perishable fruit destined to distant markets is frequently pre-cooled, i. e., it is cooled before shipment so as to reduce the cost of refrigeration and the cost of decay en route, cause the fruit to arrive in better condition, and permit it to ripen to a greater degree before being picked. The Interstate Commerce Commission has decided that pre-cooling may be done either by the railroad or the shippers and that when done by the former the maximum charge for pre-cooling must not be unreasonable.[1]

## Shipping Fruit to Market

Although some fruit may in the future be shipped in refrigeration vessels from the Pacific Coast to eastern markets through the Panama Canal, fresh fruit transportation has thus far been largely a rail movement, for the perishable fruits, especially, require rapid shipment so as to avoid decay en route.

**Refrigeration Car Service.**—The rapidity of movement as well as the required temperature for shipping perishable fruits is provided by the refrigeration car service of the rail carriers. Some of the refrigeration cars are owned by the carriers and others by private car companies, who receive from ¾ to 1 cent per mile from the railroads for the use of their cars. The icing of the cars is likewise performed in some instances by the railroads and in others by the private car companies. In either event the railroad company, in addition to the regular freight rate, collects an icing charge from the shipper, which it retains or turns over to the private car company according to whether the one or the other performs the refrigeration service.

As stated above the fruit may be pre-cooled before ship-

[1] 23 I. C. C. Rep. 267 (Apr. 8, 1912)—$7.50 fixed as reasonable railroad pre-cooling charge. Appealed to courts.

nent, but if shipped long distances the cars must be re-iced n route. In order to expedite the service icing stations are herefore erected at various points on the rail lines, agents re placed in charge, many cars are concentrated and "parked" n the growing districts shortly before the shipping season egins so as to be available when required, and the loaded cars re rushed to market as rapidly as possible, frequently in spe- ial trains. It is a common practice to ship fruit eastward r northward from the growing districts without knowledge as o its final destination, the cars being held at certain transfer nd reconsignment points for final shipping orders. It is ighly important that markets should not be overstocked, and he shippers, distributors, or growers' exchanges therefore refer to keep the cars which are traveling across the country nder their control until they ascertain existing market condi- ions.

Owing to the nature of the service rendered and the great istances between many of the growing sections and markets, he transportation of fruit is expensive and usually affects eriously either the prices received or the growers' profits. The railroad freight rates on peaches shipped to Philadelphia rom Sacramento, California, are $299, and from Atlanta, Georgia, $171 per carload of 26,000 and 22,500 pounds re- pectively, and the refrigeration charges to Philadelphia from he same points are usually about $82 [1] and $59 respec- ively.

The direct and important connection between the refrig- ration car service and the fresh fruit trade, the relation be- ween the railroads and the private refrigeration car compa- ies, the uses and past abuses of these companies, and the resent control of the icing charges by the Interstate Com- nerce Commission, have been fully discussed elsewhere.[2]

**Fruit Markets.**—There are two quite distinct classes of ruit markets in the United States: the "direct, special, or etail market," and "the indirect, general, or wholesale mar-

[1] $87.50 if iced during loading.

[2] See E. R. Johnson and G. G. Huebner: Railroad Traffic and ates, vol. i, chap. xii.

ket."[1] These markets differ in many respects: (1) Special markets are local in character and are located everywhere throughout the country, especially in cities situated near the fruit orchards. General or wholesale fruit markets on the contrary are located chiefly in the great cities and centers of population, and receive fruit not only from nearby growers but from distant parts of the United States and foreign countries. (2) Competition in the special markets is local while in the general markets it is national and world-wide. (3) The special and general fruit markets differ also in that the former handle fruit in small quantities, while the latter handle it in carload and vessel load lots. (4) The profits per bushel, quart or package in the special markets are usually large as compared with those in the general markets. (5) In the former the growers usually sell either directly to consumers or to retail stores, while in the latter they usually sell to middlemen and seldom direct to consumers. (6) The former accept an almost unlimited number of varieties, while the latter confine themselves largely to a smaller number of standard, well-known varieties. (7) In contrast with the special markets which pay as much attention to quality as to appearance, the general markets rely more largely upon the appearance of the fruit. (8) The growers with a special market can largely disregard shipping quality, while those shipping to the general markets must so far as possible select varieties which will bear shipment and rough handling. (9) "The wholesale market requires a standard package, while almost any neat, clean package may be used in the direct market, and sometimes fruit is delivered in bulk from sacks, boxes, barrels or baskets, without any package. In the wholesale market a gift package is practically always required, while the man who has private customers frequently has his boxes or baskets returned to him."[2] (10) In contrast with the special or private markets which frequently pay large prices for fruit out of season, the general markets are usually available only for fruits in season.

[1] F. A. Waugh, pp. 4-8.
[2] *Ibid.*, p. 6.

Although particular growers and small crop-growing districts often ship their entire crop to the same wholesale market year after year, fruit is more commonly distributed in strict accord with market conditions. Thus California fruit has the advantage in nearby western markets, but thousands of carloads are shipped to the large cities of the trans-Mississippi Valley, to Chicago, St. Louis, Milwaukee and all the large cities of the Middle West, and to New York, Boston, Philadelphia, Baltimore, Washington, Pittsburgh, Buffalo and other eastern markets. Each large district supplies the nearby markets during its fruit season, but usually ships to many other markets throughout the country. The growers of the Atlantic seaboard, however, ship relatively little fruit westward because they are located near the huge eastern wholesale and retail markets which readily accept enormous quantities of fruit.

**Fruit Exports.**—Some American fruit is exported to foreign markets. Appreciable quantities of dried apples are shipped to Germany and Holland; green and ripe apples to Great Britain, Canada and Germany; dried apricots to Great Britain, Germany, France, Holland and Belgium; oranges to Canada; prunes to Germany, Holland, France, Canada and Great Britain; raisins to Canada, New Zealand and Great Britain; and canned fruits of various kinds to Great Britain and Canada, and smaller quantities to numerous other foreign countries. The total value of all the fruits and nuts annually exported from the United States ranges from $15,- to $24,-000,000.

**Fruit Warehouses.**—Cold storage warehouses in which fruit may be stored have been erected both at some of the points of shipment and at the large wholesale markets. The former, many of which are operated by coöperative growers' associations, are mainly used for packing and pre-cooling fruit for shipment, the total amount of fruit stored in them for sale in the future, except at a few points, being relatively small. The large cold storage warehouses at the central markets are operated by private warehousemen and railroads, and are used for the storage of many kinds of commodities. They

act as great reservoirs which equalize the supply of fruit throughout the year, especially between harvesting seasons. The warehousemen act as trustees for jobbers, commission-men, growers, or any of the marketing agencies mentioned below; they frequently finance the operations and sometimes invest in the corporations of their clients; and many of them deal in fruit jointly with their clients or entirely on their own account.[1]

## Methods of Marketing Fruit

**Distribution in Wholesale Markets.**—The sale of fruit in the special or retail markets by growers to consumers or retail concerns is a direct sale which requires no detailed description. The great fruit-growing districts, however, are largely dependent upon the large wholesale markets where they dispose of their crop in many different ways. In speaking of the sale of fruit by growers it is of course understood that they may act either individually or jointly through a coöperative association or exchange.

1. Many fruit growers sell their fruit to local dealers under any one of various kinds of contracts.[2] They may sell the orchard as a whole, the dealers agreeing to accept the fruit on the trees, pay a lump sum for the crop, and perform the necessary picking, sorting, grading, packing and hauling. They may sell their fruit "on the table" in which case the growers do the picking and hauling while the dealers furnish the packages, perform the sorting, grading and packing, and pay an agreed amount per barrel, box or other unit. The growers may sell "f.o.b. loading station," i. e., they may receive so much per barrel, box, etc., delivered at the shipping station, all intermediate work being done by them. They may also sell their crop for delivery at the dealer's packing warehouse, at so much per barrel or other measure, the dealer preferring to prepare the fruit for final shipment to the whole-

[1] *See* G. H. Powell: Coöperation in Agriculture, pp. 203-204.

[2] *See* Report of Secretary of Missouri State Board of Horticulture (1912), pp. 19-20.

sale markets. Local dealers in turn sell the fruit directly to wholesale jobbers, distributors, or in some cases to retailers, and indirectly through commissionmen and auction companies.

2. Fruit growers may sell to so-called "fruit distributors," or "marketing corporations." These concerns which may be located either in the growing districts or at the wholesale markets usually act as brokers. They usually sell direct to wholesale jobbers for cash f.o.b. or subject to inspection on arrival, through auction companies, or in any other manner, and receive a brokerage charge of from 5 to 10 per cent. on the gross sales. Some of them also buy fruit from the growers on their own account, thereby acting as dealers. One of the largest distributing concerns is the "California Fruit Distributors" which handles about 75 per cent. of the entire deciduous fruit shipments of California.[1]

3. Much fruit is sold by the growers direct to wholesale jobbers. These concerns obtain their supply in many different ways, for in addition to the fruit purchased from the growers by mail orders or traveling solicitors, they buy through commissionmen and auction companies or from local dealers and distributing concerns and local dealers sometimes act as brokers for them. The wholesale jobbers in turn sell most of their supply to retail grocery stores, retail fruit stores and stands, fruit vendors and hucksters, and generally to the retail trade. They also place much fruit in storage, gradually disposing of it as the retailers find a market.

4. Much fruit is sold by growers and local buyers through central commissionmen. Indeed, the fruit trade was for many years closely dependent upon the commission houses, and although the tendency is to reduce the number of middlemen the commission house continues to be an important link in the fruit marketing machinery. The practice of many local shippers is to consign their fruit to the commissionmen who

[1] F. B. McKevitt: Marketing of Fruit by California Fruit Distributors, Proceedings of 38th Fruit Growers' Convention of California (1910), pp. 53-60.

sell it direct to retail stores, vendors, hotels and other retail establishments, and if necessary to wholesale jobbers, or through auction companies. They receive from 5 to 10 per cent. on the gross sales as a commission for their services, and after deducting freight, refrigeration, drayage and any other shipping costs which may have been incurred, remit the balance to the local shipper. Some commissionmen taking advantage of the distance which separates them from the local shippers, have at times stooped to dishonest practices, and although the dishonest concerns doubtless are the exception to the general rule, the resulting distrust has done much to encourage the rise of jobbing houses, auction houses, growers' coöperative exchanges and other more direct means of marketing.

5. Some fruit is sold by growers and other local shippers through fruit brokers, who differ from the commissionmen chiefly in that they usually sell to the wholesale trade. They usually solicit orders from wholesale jobbers and then secure the required amount of fruit from growers or local buyers, receiving a brokerage fee of from 3 to 5 per cent. on the gross sales, or of agreed amounts per barrel, box or other package. Some of them also act as jobbers, speculating in the fruit which they handle; and they endeavor at times to distribute the surplus stock of the large markets among the smaller markets of the surrounding community.[1]

6. Auction companies have been formed at many large markets and at some local shipping points for the public sale of fruit and produce to the highest bidder. Like the commission concerns the auction companies accept consignments of fruit from growers, local dealers or others, but they differ in that while the former sell privately to a relatively small number of buyers, the auction concerns sell to a large number at public sales, receiving from ½ to 5 per cent. on the gross sales for their services. The stockholders of the auction companies in some instances are the jobbers and other members of the trade, and some of them have not provided the open

[1] G. H. Powell, p. 200.

and unrestricted markets which the auction system usually provides. "The auction company may also be a dealer in the products which it sells for its patrons. It may be engaged, either directly or indirectly, in financing its clients, in handling the products on joint account with its patrons, or in the purchase of products to be sold in competition with those of its clients." [1]

7. Though the bulk of the country's fruit sold in the large wholesale markets is handled through the various agencies mentioned above, some of it is sold in these markets directly by the growers. In well-organized fruit-growing regions the growers sometimes form coöperative selling exchanges, such as the California (Citrus) Fruit Growers' Exchange, which have salesmen at the large markets who keep the growers advised as to the state of the market and sell their fruit to wholesale or retail buyers or through auction companies, thus dispensing with the commissionmen and brokers and sometimes with the jobber and auction companies. In the great eastern and middle-western fruit markets the efforts of these salesmen do not extend beyond the wholesale and retail buyers. In cities near the growing districts, however, some of the coöperative associations, when possible, sell direct to consumers.

Some individual growers also sell their fruit to retailers without the medium of commissionmen, jobber or other middleman. Those located near a large market can in many instances readily sell some of their crop in this way, but it is at times done also by growers located at a distance. They may sell freely to all bidders or under exclusive contracts, they may sell it f.o.b. at point of shipment, for delivery at destination, or for delivery at retailer's premises; and they may arrange to have the retailer handle the fruit on his own account or on a commission basis. A grower far away as Montana regularly stores some of his apples in eastern cold storage warehouses, from which they are delivered each day by a transfer or drayman to retailers who receive from 20 to 30

[1] Proceedings of New Jersey State Horticultural Society (1912), 70.

per cent. on the retail sales for their services as retail sales men.[1]

On the whole relatively little fruit is as yet sold directly by growers to retailers at the large general fruit markets, the great bulk passing through the regular trade agencies mentioned above. Though serious abuses have at times arisen most of these agencies are, even by some of the exponents of growers' coöperation, regarded as "men of integrity, business energy and resourcefulness, and as equal in these respects to any other class of men who deal in the products of the soil."[2] It should be noted that the various agencies which have been discussed separately, frequently overlap—commissionmen, brokers and auction companies, for example, may act as jobbers, jobbers may handle some business on consignment, and local dealers may act as brokers.

**Retailing of Fruit.**—Fruit differs from the farm products previously discussed in that a larger portion of the crop is retailed to consumers. (1) A large proportion of the fruit crop is retailed by general grocery stores operating individually or in chains, by special fruit and produce stores or stands, by fruit vendors and hucksters and other retail dealers who obtain their supply from the wholesale markets or direct from fruit growers.

(2) Consumers purchasing in bulk sometimes purchase from certain wholesale dealers or commissionmen who do a retail as well as a wholesale business.

(3) Growers located near the retail markets frequently retail their fruit, vegetables and other produce to the consumers.

Fruit retailers reach the consumers in numerous ways. They may dispose of their fruit at private stores or stands, directly from railroad cars, at consumers' premises, or at public or municipal markets. The latter are particularly convenient for growers who desire to retail in large cities.[3] At

[1] Annual Report of Montana Horticultural Society (1912), pp. 47-48.

[2] G. H. Powell, p. 205.

[3] *See* pp. 23, 24.

a limited number of municipal markets a wholesale as well as a retail trade in fruit and produce is conducted, but most of them are primarily retail markets.

### Fruit Growers' Coöperative Associations

In no other branch of farming industry is there so much coöperation among growers as in the fruit and vegetable industries. One of the conditions which has encouraged this coöperation is that many fruit-growing districts have been confronted by unusual difficulties in the shipping and marketing of their crops. The chief reason, for example, why coöperation was established at an early date in the Pacific and far-western districts was the difficulty of profitably selling in distant markets. Coöperation among fruit growers is also encouraged by the geographical compactness of many of the growing districts, by the similarity of the fruit grown in a given district, by the successful education of many growers in the trade possibilities of coöperation, and in some regions by the precedent of coöperative irrigation.

The coöperative associations have been confronted by numerous obstacles as a result of which many have not been successful. The individuality and distrust of the growers which in many cases is broken down only by the force of necessity, management by impracticable and low-salaried managers, organization in times when the growers were prosperous and did not feel the effects of low prices, unfair demands by members as to prices and grading, the adoption of unsuccessful forms of organization and methods of coöperation, the production of inferior fruit, the disloyalty of members, and the attacks and opposition on the part of private buyers, have caused the downfall of numerous coöperative ventures. Many others, however, have been successfully organized and are in practical operation.

The coöperative associations are variously organized, some of them being organized as joint-stock companies with distribution of profits on a stock basis and others as simple

non-profit associations operated on a cost basis. The voting power of the shareholders is likewise arranged in different ways—on the basis of the amount of stock held, the acreage planted, the probable crop, or the crop of the preceding year.

Fruit growers coöperate in many different lines of activity. As was previously mentioned some of them coöperate in the *shipping and marketing* of fruit, selling their crops either through regular trade agencies or through their own salesmen. The California (Citrus) Fruit Growers' Exchange, which is an instance of successful and extensive coöperative marketing, has a threefold organization: (1) Locally it is based upon 115 local associations, each comprising from 40 to 200 growers and about 500 acres of orange and lemon groves. Each handles the fruit of its members on a cost basis, either for its individual members separately or by pooling it each month or season. (2) The local associations are banded together in 17 district exchanges, which are also operated on a non-profit basis, and act as district clearing houses. They order cars for the local packing houses, keep a record of the cars shipped by each local association, keep them posted with authentic trade information, and return to them the proceeds of their sales. (3) The district exchanges, in turn operate through the California Fruit Growers' Exchange which is managed by a skillful manager and a board of directors. This central exchange provides the district exchanges with the necessary marketing facilities on a cost basis, gathers current information, issues daily bulletins, advertises, handles claims and litigation, provides an organized selling force consisting of some 75 principal offices in the leading markets of the United States, Canada and Europe and 200 salaried salesmen, and remits the proceeds of sales to the growers through the district exchanges.[1]

In the selling of fruit few coöperative associations have gone beyond the wholesale trade, but they have accomplished

[1] G. H. Powell, pp. 241-246; Proceedings of 40th Fruit Growers' Convention of California, pp. 40-44; *Ibid.*—39th, pp. 85-89; F. W. Powell: Coöperative Marketing of California Fresh Fruits, *Quarterly Journal of Economics*, Feb., 1910.

much through careful distribution and shipping, protection of members' interests in the wholesale markets, and in some instances through eliminating some of the middlemen. They sell either for each grower individually, or when the fruit of a given district is fairly uniform, in pools arranged on a daily, monthly, semi-monthly or seasonal basis.

The fruit growers of many districts also coöperate in the *grading and packing of fruit*, these functions being performed either by association employees at central packing houses or by the growers according to association rules and subject to inspection. Some *harvest* their fruit coöperatively, the fruit being picked either by gangs of trained association pickers or by the growers according to rules. Many coöperate in the *purchase of fruit packages, harvesting, pruning and picking equipment and other supplies and fertilizers;* in the *protection of fruit from insects and pests;* and in the erection of *cold storage warehouses* and the *storage* and *pre-cooling* of fruit. There is difference of opinion among the fruit growers as to the likelihood of generally going beyond the wholesale markets in the coöperative sale of fruit, but many are convinced that in the fields of activity mentioned above there are no valid reasons why they should not apply the same principles of united action which have been so effectively applied in the manufacturing, mining and transportation industries.

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# CHAPTER XIII

## THE COMMERCIAL INSPECTION AND GRADING OF AGRICULTURAL STAPLES

Each of the great agricultural staples is usually classified into (1) certain classes, types or general groups, and (2) into grades, and sometimes, as in case of leaf tobacco, the classes and types are further subdivided or distinguished. Ordinarily the classes or types represent differences in variety, in the territory in which the product is grown, or in general character, appearance and quality. The grades on the contrary represent specific differences in character, appearance, quality, cleanliness, condition or other special considerations.

**Functions of Inspection and Grading.**—The division of commodities into classes and grades is not confined to the agricultural staples, articles such as coal, iron ore, pig iron, lumber, etc., being similarly handled. The practice prevails in practically all commodities which are produced by a large number of producers and are distributed in large quantities by a large number of dealers. Since these conditions prevail in the farming industries the inspection and grading of the agricultural staples is particularly important.

The functions of commercial inspection and grading are various. (1) The practice facilitates the purchase and sale of farm produce. Though much spot produce is sold by actual examination of the commodities, it is a common practice to buy and sell on the basis of samples, or a combination of samples and grades, and sometimes on the basis of grades exclusively. Grading is particularly important in the making and fulfillment of private contracts calling for the delivery at a stated future time of commodities which have not at the

time the contract is made been harvested or have not as yet been acquired by the dealer contracting to make the delivery.

(2) It greatly facilitates the quotation and publication of spot as well as future prices.

(3) It facilitates the storing and handling of commodities. East of the Rocky Mountains; for example, grain is commonly stored and handled in bulk, all grain of a particular grade being stored and handled in the same bins. Without inspection and grading the operation of the modern grain elevator system would be greatly hampered.

(4) It makes possible the general warrant or negotiable warehouse receipt system. Without systematic grading all grain elevator receipts would have to represent specific lots of grain stored in special bins, or otherwise all of the same variety would have to be indiscriminately mixed to the great detriment alike of growers, dealers and millers.

(5) It facilitates the making of loans on farm produce for it enables bankers to accept receipts issued by recognized warehouses or elevators with the assurance that they represent the particular kind of commodity stated in the accompanying inspection certificate.

(6) It tends in a measure to protect buyers and sellers from unscrupulous and dishonest practices. Inspection and grading services, particularly in the local or country markets, are not fully carried out, but so far as they are applied they serve to guarantee that commodity prices shall vary in accordance with the quality or condition of the articles sold.

(7) On the grain and cotton exchanges where speculative "futures" are bought and sold, inspection and grading are particularly essential, such contracts being invariably based upon one or more standard or basis grades, and in case of delivery, requiring the delivery of the basis grade or certain other specified grades at fixed or variable price differences.

(8) In general, also the inspection and grading services—together with the central markets, exchanges, central warehouse systems and, in case of grain and cotton, the future con-

tract system—facilitate the establishment of a national or world market for the agricultural staples.

**The Inspection and Grading Organization.**—The agricultural commodities are variously inspected and graded by different services or individuals:

(1) In some cases, particularly in case of the grain handled at some of the large primary grain markets, the commercial inspection and grading service is conducted by the states through inspection bureaus, classification boards, railroad and warehouse commissions or public utilities commissions. (2) In other cases it is performed by organized exchanges through bureaus, boards or committees, or under their auspices. (3) Dealers, jobbers, commissionmen or other trading and distributing agencies sometimes grade the commodities which they handle; and (4) in some instances, particularly in the fruit produce and leaf tobacco trades, the growers, individually or through coöperative associations, grade their crops before disposing of them. (5) The federal government does not perform actual grading services, but is instrumental in the grading of various farm products. The United States Department of Agriculture has established a set of official cotton types and grades, and it has been authorized to establish official cotton standards and to settle cotton grading disputes submitted to it by either party to a future cotton contract. It has also endeavored to harmonize the grading and classification rules and practices in the grain trade throughout the various states. Congress has, moreover, established standard grades applicable to the interstate trade in apples.

The inspection and grading organization and the methods pursued in the grain, cotton, livestock, wool and leaf tobacco trades will be described more fully in the remainder of this chapter.[1] It is understood of course that the term inspection as here used refers to commercial inspection and not to public health inspection devoted to the detection of disease or the violation of the meat and livestock inspection or pure food statutes.

[1] For fruit grading *see* chap. xii, p. 244.

## Inspection and Grading of Grain

At many country grain markets throughout the farming regions where grain is the dominant agricultural staple the grain sold to local buyers is graded locally by each purchaser individually or by inspectors representing all the buyers of a given market. At other local markets, particularly in regions where relatively little grain is produced, no definite grades are established, the buyers merely bidding on each lot of grain offered by the farmers. When, however, the grain bought at the country elevators and warehouses is shipped to the primary markets it is carefully graded in accordance with well-organized systems of public inspection. It may frequently happen that a carload graded locally as say No. 3 red winter wheat is sold at the primary markets as No. 2 or some other higher or lower grade. It is at the primary and seaboard markets that the grain is systematically graded for there most of it is stored and handled in bulk, there the general warrant (warehouse receipt) system prevails and grain becomes the basis for loans, there the grain is repeatedly sold and resold by grade, sample, or grade and sample combined, there grain "futures" to which grading is absolutely essential are regularly dealt in, and there also the prices of spot grain and futures are determined. The farmers are directly concerned with the grading of grain at the primary markets whenever individually or as a coöperative association they ship their grain for sale in those markets, but they benefit indirectly even when they sell locally, because the grain trade as at present conducted is in many respects based upon the prevailing system of inspection.

Grain inspection at the central markets is conducted publicly, either through the grain exchanges or by a state inspection service. Most of the principal grain-growing states have created public grain inspection departments, bureaus or boards.

**Illinois Grain Inspection Service.**—The organization and methods of the state grain inspection service of Illinois may

be accepted as a standard illustration of state grain inspection both because it was the first to be established in the United States[1] and because it operates in Chicago, the largest grain market in the world. Prior to 1904 the so-called "track system" of inspection prevailed in Chicago as it also did in other central grain markets. Under this system the grain was inspected in the cars by individual inspectors who worked in the open freight yards. In that year, however, the much improved system of "room" or "office inspection" was adopted

MEMORANDUM TICKET

**ILLINOIS STATE GRAIN INSPECTION**

CHICAGO DISTRICT

| CAR NO. | INITIALS | GRAIN | GRADE |
|---|---|---|---|
| | | | |

REMARKS

CONSIGNEE

DATE

SAMPLER'S REMARKS

MOISTURE CONTENT | SAMPLER | INSP. | HOOK NO.

FORM 26

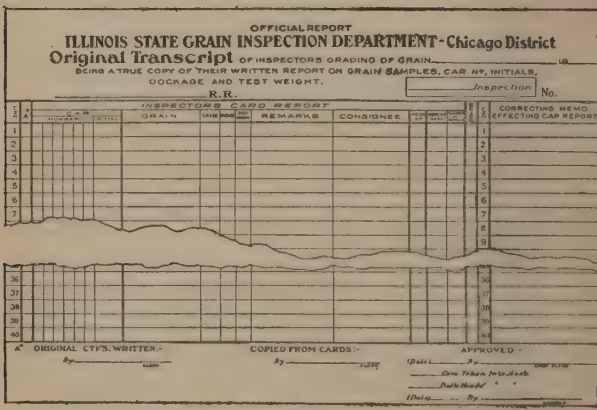
at Chicago, and since then it has also been established in Minneapolis, Duluth, Buffalo and in part at other markets.[2] Office inspection is superior to track inspection in that it avoids the bad influence of adverse weather conditions upon the judgment of the inspectors and the condition of the grain, substitutes the combined judgment of several inspectors for the individual judgment of one, and has the advantage of laboratory aid in the determination of the percentage of moisture. The grading of grain is at best largely

[1] Established in 1871.

[2] J. C. Merrill: "Classification of Grain into Grades," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 62.

a matter of human judgment rather than one of scientific exactness, and this judgment is less subject to error under the favorable conditions of a well-heated or cooled and lighted inspection room than in the open freight yard which is subject to varying conditions of excessive cold or heat and or rain or snow.

Under the office inspection plan as now conducted at Chicago, a corps of state samplers take samples from all the cars


OFFICIAL REPORT
ILLINOIS STATE GRAIN INSPECTION DEPARTMENT - Chicago District
Original Transcript OF INSPECTORS GRADING OF GRAIN
BEING A TRUE COPY OF THEIR WRITTEN REPORT ON GRAIN SAMPLES, CAR No., INITIALS, DOCKAGE AND TEST WEIGHT.
R.R.
Inspection No.
INSPECTORS CARD REPORT
GRAIN
REMARKS
CONSIGNEE
CORRECTING MEMO EFFECTING CAR REPORT
ORIGINAL CTFS. WRITTEN
COPIED FROM CARDS
APPROVED

FORM 27

arriving at the freight yards. These samples consisting of two quart bags filled with grain drawn from different parts of each car [1] are properly marked and together with the railroad notice of arrival are turned over to the inspectors at the inspection office, where they are emptied into receivers and immediately graded. If the inspector in charge of a given lot has any doubt as to the proper grade "he calls upon the chief grain inspector or supervising inspector who is always present and their combined judgment determines the grade. Fre-

[1] W. S. Cowen: "Grain Inspection in Illinois." *The Annals of the American Academy of Political and Social Science*, Sept., 1911, pp. 81-90.

quently all the inspectors are called around the table holding some particularly difficult sample and each inspector is required to make a grade for it and give his reasons therefor." [1]

As soon as a sample is graded the grade is noted on a card such as is reproduced in Form No. 26, the sample and card are placed in the original bag, and are passed along to the official record writer, who enters the name of the delivering railroad, the car number, the grade, dockage and test weight of the grain, the reasons for the grade given, the names of the consignees and inspector who did the grading, and the num-

No B 10640
CHIEF INSPECTOR OF GRAIN
Chicago, DUPLICATE.
This Certifies that according to the records of this office there was inspected on the above date by a Deputy Inspector under the supervision of the Illinois State Grain Inspection Department into
Bushels
For account of
John P. Gittens
CHIEF INSPECTOR

FORM 28

ber of the hook on which the sample is to be hung on the official card record sheet, a copy of which is shown in Form No. 27. The samples are then taken to the "splitting" department where a group of men divide them into two equal parts, and they are again examined by two inspectors so as to minimize the likelihood of error. One-half of each sample is placed in a paper bag together with the railroad notice and sent to the Board of Trade to be placed in charge of the firm handling the shipment, and the other is returned to the original bag and hung upon its proper hook in the sample room to be preserved for twenty-four hours and then emptied.

[1] *Ibid.*, p. 83.

The official grade is stated in a state inspection certificate, a copy of which is reproduced in Form No. 28.

Should there be dissatisfaction with the original inspection, application for reinspection may be made on Form

APPLICATION FOR RE-INSPECTION
to the
**Illinois State Grain Inspection Department—**
CHICAGO DIVISION

We herewith request Re-Inspection of Cars detailed below. If Original Inspection is sustained we agree to pay you Fees applying and now in effect.

Original inspection.

Re-inspection called. Re-inspection accomplished.

(Date)_____ 191____

(Date)_____ 191____ (Date)_____ 191____

(Hour)_____ M. No._____ (Hour)_____ M.

| Line | CAR NUMBER | CAR INITIALS | ROAD OR ELEVATOR | Deputy Insp. | PRESENT GRADE | Sustained (Yes) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |

_____ Sustained
_____ Changed

INSPECTOR.

(APPLICANT) _____

Official Record Harmonized_____ CLERK. Per_____

FORM 29

No. 29. Even thereafter an appeal may be made to the "Appeals Committee" which consists of three men not connected with the inspection department and not engaged in the purchase or sale of grain. The judgment of this committee, after obtaining and examining fresh samples, is final and is binding upon the parties making the appeal.

All grain stored in the central elevators is inspected and graded at least twice—once as has just been described, when it is loaded "in," and again when it is loaded "out." As was previously mentioned it is owing to the difference between the "in" and "out inspection" that profits may be realized from the mixing of grain in private elevators or special bins.[1] So-called house inspectors are stationed at the elevators of Chicago by the state inspection department to grade the grain shipped out, but in order to make the in and out inspections equally severe, the department also requires that samples from each car or vessel load be sent to the main office for reinspection by a board of review under the direct supervision of the chief grain inspector, any errors in the work of the house inspector being subsequently changed.

The Illinois State Grain Inspection Department operates under civil service rules. Its immediate head is the Chief Inspector of Grain, and it is administered in accordance with rules prescribed by and is under the supervision of the Illinois State Public Utilities Commission. As was formerly stated the work of state inspection is conducted hand in hand with state weighing, warehouse receipt registration and elevator supervision.[2]

**Factors Determining Grades of Grain.**—Four principal considerations determine the classification of any given lot of grain. (1) Grain is *classed* by general varieties. Thus winter wheat is classed separately from spring wheat and these classes in turn may be subdivided into white, red, hard, northern, durum, velvet chaff, western or other varieties.

(2) Differences in *quality and appearance* are important *grading* considerations. The evidences of quality and appearance sought for are numerous. To be assigned a particular grade a given lot must meet all the requirements and restrictions as to weight, soundness, "plumpness" or shape of berry, dryness or dampness, "sweetness," coolness or heat, and "brightness" or color. The inspectors may also determine whether the grain is badly bleached, musty, "smutty,"

[1] Chap. iv, p. 82.
[2] *Ibid.*, pp. 66, 67.

"shrunken," "cracked" finely or broken, scoured, clipped chemically treated, or unfit for warehousing. In connection with some of the grades of wheat, good "milling quality" is also a grading requirement. Millers do not, however, regard the official grades as evidence of quality, for while weight plumpness, etc., are important conditions of quality, yet the public inspectors do not make a scientific test of gluten content or other direct evidences of milling quality. Mills are largely obliged to make their own tests, and in several cities laboratories devoted to a scientific analysis of wheat samples have been established.[1]

(3) *"Cleanliness"* is a *grading* consideration, i. e., the relative absence or presence of straw, chaff and other foreign substances or foreign seeds.

(4) The *degree of mixture* of varieties affects *grading*. No. 2 red winter wheat for example not permitting of more than 5 per cent. of white winter wheat, and Nos. 3 and 4 of not more than 8 per cent.

**The Grades of Grain.**—The Grain Dealers' National Association, the Chief Grain Inspectors' Association and the United States Department of Agriculture have done much to harmonize the classification and grading rules, and practices of the different states and central markets, but complete uniformity has not as yet been accomplished. A carload of grain shipped from one interior market to another or from an interior to a seaboard market may be variously classified and graded at different points.

The official state classification and grading rules applied in Chicago will serve to illustrate the general practice. The following rules indicate the difference between the various grades of white winter wheat:[2]

No. 1 *white winter wheat* shall include all varieties of pure soft white winter wheat, sound, plump, dry, sweet and clean and weigh not less than 58 pounds to the measured bushel.

[1] U. S. Bureau of Labor Statistics: Wheat and Flour Prices from Farmer to Consumer (1914), p. 31.

[2] Established by State Public Utilities Commission of Illinois, July 1, 1914.

No. 2 *white winter wheat* shall include all varieties of soft white winter wheat, dry, sound and clean, and shall not contain more than 8 per cent. of soft red winter wheat, and weigh not less than 57 pounds to the measured bushel.

No. 3 *white winter wheat* shall include all varieties of soft white winter wheat. It may contain 5 per cent. of damaged grains other than skin-burnt wheat, and may contain 10 per cent. of soft red winter wheat, and weigh not less than 53 pounds to the measured bushel.

No. 4 *white winter wheat* shall include all varieties of soft white winter wheat not fit for a higher grade in consequence of being poor quality, damp, musty, or dirty, and shall not contain more than 10 per cent. of soft red winter wheat, and weigh not less than 50 pounds to the measured bushel.

The complete list of Chicago wheat classes and grades are as follows:

| *Classes* | *Grades* |
|---|---|
| White winter wheat | Nos. 1, 2, 3, 4 |
| Red winter wheat | Nos. 1, 2, 3, 4 |
| Hard winter wheat | Nos. 1, 2, 3, 4 |
| Hard spring wheat | No. 1 |
| Northern spring wheat | Nos. 1, 2, 3, 4 |
| Spring wheat | Nos. 1, 2, 3, 4 |
| Durum wheat | Nos. 1, 2, 3, 4 |
| Velvet chaff wheat | Nos. 1, 2, 3, 4 |
| Western red wheat | Nos. 1, 2, 3, 4 |
| Western white wheat | Nos. 1, 2, 3, 4 |
| Western hard winter wheat | Nos. 1, 2, 3, 4 |
| Mixed wheat | Nos. 1, 2, 3, 4 |

In comparison the wheat grades of New York, to which city much wheat is shipped from Chicago, are as follows:

| *Classes* | *Grades* |
|---|---|
| White winter wheat | Nos. 1, 2, 3, 4, no grade |
| Red winter wheat | Nos. 1, 2, 3, 4, no grade |
| Mixed winter wheat | Nos. 1, 2, 3, 4, no grade |

| *Classes* | *Grades* |
|---|---|
| Hard winter wheat | Nos. 1, 2, 3, 4, no grade |
| White western wheat | Nos, 1, 2, no grade |
| Hard spring wheat | No. 1 |
| Northern spring wheat | Nos, 1, 2 |
| Spring wheat | Nos. 3, 4, no grade |
| Macaroni wheat | Nos. 1, 2, 3 |

The lack of uniformity resulting from differences in the number of classes and grades and in grading rules or standards, and from those due to the variable element of human judgment which is always present in the grading of grain has at times caused confusion. The usual differences between markets, however, are understood by the grain trade, the differences have gradually become narrower, and the methods and machinery of inspection have in recent years been improved in many of the principal grain centers.

## Cotton Grading and Inspection

The same reasons which underlie the careful classification and grading of grain also underlie the classification and grading of cotton, for both commodities are the basis of a vast trade in future contracts as well as of spot or cash transactions. The difficulties encountered in the inspection of cotton are even greater than in the case of grain, for the cotton crop comprises a wider range of quality. Cotton grades are vitally affected by differences as to the time of ripening and harvesting, methods of picking, soil conditions, and as to storms, frosts and other conditions of weather. These differences, if general, give every cotton crop a more or less distinctive character, and, if limited to particular sections of the cotton belt, cause wide differences in the range of quality; indeed cotton of many qualities is sometimes unavoidably compressed into a single bale. The wide range in the varieties of cotton grown throughout the South, moreover, adds to the general confusion.

**Cotton-grading Factors.**—The various "grades" recognized on the cotton exchanges and generally in the trade, depend largely upon three considerations: (1) color, (2) relative freedom from leaf and other foreign substances, and (3) character.

In the matter of color three main divisions are recognized—white, tinged and stained. Cotton is "white" when it opens in the fields and is picked before being affected by frosts or winter storms; it is "tinged" when the bolls before they open are lightly frosted or when the cotton has been exposed to rain so as to give to the cotton a yellowish or golden orange color; and it is "stained" when heavy frosts or severe rainstorms turn its natural white color into a deep orange or tawny color. White cotton may have different degrees of white ranging from "bright" to "bluish"; and tinges and stains may have different degrees of color. The classification returns of the New Orleans Cotton Exchange, for example, in addition to standard white and staple cotton, recognize off-colored, spotted, light-tinged, medium-tinged, tinged, light-stained, medium-stained, stained, flash-dust and gritty [1] cotton. The many differences in color due chiefly to weather and soil conditions, constitute one of the difficulties of grading; the passing of a cloud or the presence of snow on the ground may unconsciously influence an inspector to the extent of as much as a quarter of a grade.[2]

Leaf and other foreign substances or impurities such as dry leaves, specks of dust, dirt, sand, bits of husk, strings, motes, gin-cut fiber, cut-seed and unripe fiber, vary from year to year, from one growing district to another, and from one sale to another and are direct grading factors.[3] The "char-

[1] Rules of the New Orleans Cotton Exchange, Nov. 6, 1914, p. 38.

[2] U. S. Bureau of Corporations: Cotton Exchanges (1908), Part I, p. 65.

[3] "Motes" are immature seeds or ends of seeds that are pulled off in ginning. "Neps" and "cut-fibers" are lots, bunches or kinds resulting from feeding the gin too rapidly, from the gin being in bad order, from the presence of unripe fiber, or from dampness. "Strings" result from ginning unripe or wet seed-cotton or from the wrong adjustment of the gin-saw brushes. "Cut-seeds" result from

acter" of the cotton is a more indefinite consideration, referring to the general condition or quality of the cotton. All the grading factors are essentially dependent upon human judgment, and it is entirely probable that no two experts would grade a large lot in exactly the same way or that the same expert would grade it in exactly the same way at different times.

The commercial "grades" of cotton do not regularly take into consideration the length, strength, pliability, cling and evenness of the cotton fiber, although these considerations are of great importance to the spinner, and it is partly because of their disregard that many spinners do not buy solely on the basis of grade. They commonly buy either by sample, or combination of grade and sample. When they purchase by grade, one of the practices of the cotton trade is to state the staple as well as the grade, as for example, "fully good middling, $1\frac{1}{8}$ inch staple, Liverpool class," or "strict low middling $1\frac{1}{16}$ staple, New York class." Another practice is to state the length of staple in comparison with the length of staple of a type which has been agreed upon as a standard by both buyer and seller. In the spot markets, cotton, the fiber length of which is $1\frac{1}{8}$ inches or above, is usually known as "staple cotton" and is more commonly sold by sample than in any other manner. In case of contract deliveries, the New York and New Orleans Exchanges make no allowance unless at least 80 per cent. of a lot of cotton has a staple of at least 1 or $1\frac{1}{16}$ inches respectively; and limit it to $\frac{1}{4}$ cent per pound. These allowances, moreover, are in the price paid for the cotton and not in its grade.

The various *general classes* of cotton recognized by the trade, such as Atlantic Upland, Gulf, Texas, peelers, canebrake, rivers and benders, convey to the cotton buyer much information as to the length and strength of the cotton staple. These classes which indicate general differences in variety, length of staple and region of growth are defined in chapter V.

"fast ginning with a hard roll and by broken or bent gin saw teeth that strike the grate bars." See U. S. Bureau of Plant Industry: Farmers' Bulletin No. 591, July 10, 1914, pp. 3-5.

It is probable that in the future spinners will be enabled to purchase a larger share of their cotton on the basis of known standard types, for the Secretary of Agriculture has been authorized by the Cotton Futures Act "to establish and promulgate standards of cotton by which its quality or value may be judged or determined, including its grade, length of staple, strength of staple, color, and such other qualities, properties, and conditions as may be standardized in practical form which shall be known as the 'Official cotton standards of the United States.'"

**Cotton Grades.**—The grades in most common use in American spot cotton markets are thirteen in number, as follows:

| *Above Middling* | *Below Middling* |
|---|---|
| 1. Fair | 7. Middling |
| 2. Strict middling fair | 8. Strict low middling |
| 3. Middling fair | 9. Low middling |
| 4. Strict good middling | 10. Strict good ordinary |
| 5. Good middling | 11. Good ordinary |
| 6. Strict middling | 12. Strict ordinary |
| | 13. Ordinary |

"Middling" cotton is invariably the basis grade, and the grade names containing the word "strict" are known as "half" grades in contrast with the remaining or "full" grades. Frequently many additional grade names are used, because the thirteen grades mentioned above unless further qualified have reference only to white cottons. In grading colored cotton the general practice in the larger spot markets is to add to the usual grade names the words "off color" or "fair color," "spotted," "tinged," or "stained," the result being that there may be various classes of the same grade of cotton.[1]

As in the case of grain, there has been and still is lack of uniformity among the various cotton markets as to the number of grades recognized and the severity of the rules governing them. As long ago as 1871 the cotton exchanges of the

[1] U. S. Bureau of Plant Industry: Farmers' Bulletin No. 591, July 10, 1914, p. 2.

United States endeavored to bring about uniformity by adopting a system then known as the American classification, but which later became known as the New York classification because the exchange of that city adhered to it for forty years. Until January 1, 1908, this classification as enforced in New York comprised 30 grades, 11 full grades, 10 half grades, and 9 quarter grades. The basis of this, as of all other cotton classifications, was "middling" cotton, above which there were nine superior grades and below which there were 20 grades of inferior quality.[1] All of these grades were for many years deliverable on New York contracts, but grading practices had meanwhile changed throughout the South and there was complaint that too many low grades were deliverable in the New York market. The New York Cotton Exchange, therefore, on January 1, 1908, reduced the number of deliverable grades to 19, on April 1, 1908, to 18, and on December 1, 1914, to 14. In 1915 this entire system of classification was abandoned in favor of a system based upon the standard grades established by the United States Department of Agriculture.

In an effort to bring about greater fairness and uniformity

[1] The New York classification prior to Jan. 1, 1908, contained the following grades, the terms "barely" and "fully" indicating quarter grades, the term "strict" half grades, and the others being full grades:

† Fair
† Strict middling fair
Middling fair
* Barely middling fair
Strict good middling
* Fully good middling
Good middling
* Barely good middling
Strict middling
Middling
Strict low middling
* Fully low middling
Low middling
* Barely low middling
Strict good ordinary
* Fully good ordinary
† Good ordinary
Strict good middling tinged
Good middling tinged
Strict middling tinged
Middling tinged
Strict low middling tinged
† Low middling tinged
* Strict good ordinary tinged
* Fully middling stained
Middling stained
* Barely middling stained
‡ Strict low middling stained
* Fully low middling stained
* Low middling stained

* Eliminated on Jan. 1, 1908.
† Eliminated on Dec. 1, 1914.
‡ Eliminated on Apr. 1, 1908.

in the grading of cotton, Congress in 1909 directed the Department of Agriculture to establish a set of so-called *standard grades,* and the department decided upon nine grades of white cotton as shown in Table XII. The differences in value of the various grades as compared with "middling" cotton, which are shown in this table, are only approximate and fluctuate from time to time.

TABLE XII

STANDARD GRADES AND APPROXIMATE DIFFERENCES IN VALUE

| *Grades* | *Approximate Difference in Value per Pound* |
|---|---|
| Middling fair ..... | 1 cent above middling |
| Strict good middling.... | $\frac{3}{4}$ cent above middling |
| Good middling ..... | $\frac{9}{16}$ cent above middling |
| Strict middling ..... | $\frac{1}{4}$ cent above middling |
| Middling ..... | Basis |
| Strict low middling..... | $\frac{1}{4}$ cent below middling |
| Low middling ..... | $\frac{1}{2}$ to $\frac{5}{8}$ cent below middling |
| Strict good ordinary.... | $\frac{7}{8}$ to 1 cent below middling |
| Good ordinary ..... | $1\frac{3}{16}$ to $1\frac{5}{16}$ cents below middling |

Sets of these grades are put up in boxes, each grade box containing twelve types of a given grade, and are sold at cost to all persons, exchanges or organizations interested in cotton grading. Although their adoption in stop markets is not compulsory, up to May 1, 1914, they had been officially adopted as the basis of cotton grading by the exchanges of New Orleans, Memphis, St. Louis, Charleston, Natchez, Little Rock, Galveston, Macon, Mobile, Oklahoma and New York, and by the New England Cotton Buyers' Association, the Arkwright Club, the Southern Cotton Buyers, and the Fall River Cotton Buyers, and had been widely distributed to private cotton concerns.[1]

These standard grades, moreover, were legally applied to future contract transactions by the Cotton Futures Act which

[1] U. S. Bureau of Plant Industry: Farmers' Bulletin No. 591, p. 12.

became effective on February 18, 1915, and by the accompanying rules of the Secretary of Agriculture.

The adoption of the standard grades by an exchange does not limit its grades to nine. The standard grades merely serve as the basis of classification and as a limit upon the range of deliverable cotton. The New Orleans Cotton Exchange, for example, which had adopted them as its basis even before the passage of the Cotton Futures Act, recognizes seventeen classes of white cotton as follows:

Middling fair
Strict good middling to middling fair
Strict good middling
Good middling to strict good middling
Good middling
Strict to good middling
Strict middling
Middling to strict middling
Middling
Strict low middling to middling
Strict low middling
Low middling to strict low middling
Low middling
Strict good ordinary to low middling
Strict good ordinary
Good ordinary to strict good ordinary
Good ordinary

As stated above (page 271) the New Orleans Exchange also requires the classifying for off-colored, spotted and discolored cottons in accordance with these classes. The grades deliverable on a future contract, however, are limited to the grades stated in the contract (page 141) and fall within the range defined by the standard grades of the Department of Agriculture.

In 1914, the New York Cotton Exchange also adopted the standard grades of the Department of Agriculture as the basis of classification for all contracts maturing April 1, 1915, and thereafter. The Cotton Futures Act, however, resulted in their general adoption on February 18, 1915, the exchange recognizing the nineteen grades indicated in Form No. 35 (page 284). The grades deliverable on future contracts as in case of the New Orleans Exchange are limited so as to comply with the provisions of the Cotton Futures Act.

In June, 1913, an international convention of cotton exchanges was held at Liverpool, and an endeavor was made to bring about an *international standard* of cotton classification. The convention decided in favor of the *Liverpool standards*[1] with certain changes in the lower grades. This system of grading has, however, not been adopted by American exchanges, although it is urged by the New York Cotton Exchange in preference to the standard grades established by the Department of Agriculture.[2]

The "official cotton standards of the United States" which the Secretary of Agriculture may establish in accordance with section 9 of the Cotton Futures Act may in the future cause wide changes in cotton grading, for he is instructed to consider not only the usual factors which have influenced cotton grading but also the length and strength of staple, and any other properties which may be standardized. When established, these official standards may, moreover, tend to bring about a greater degree of uniformity than has thus far prevailed in the cotton trade, because many spot markets will doubtless adopt them voluntarily and exchanges upon which futures are sold are legally required to adopt them. The rules of the New Orleans Cotton Exchange, for example, provide as follows:

RULE 39. The present Type Standards, which are those adopted by the United States Department of Agriculture, shall govern all transactions for delivery made under these rules and those previously existing. When, however, the "Official Cotton Standards of the United States," to be established by the Secretary of Agriculture, under the United States Cotton Futures Act, are promulgated, they shall become the official standards of the New Orleans Cotton Exchange and shall be the basis of settlement of all "New Style" contracts then existing, whether or not the value of such contracts is thereby affected.

[1] Liverpool Standard Grades are: Middling fair, fully good middling, good middling, fully middling, middling, fully low middling (1 tinged type), low middling (grayer), fully good ordinary (off-color), good ordinary (off-color), and ordinary.

[2] *See Textile Manufacturers' Journal*, May 9, 1914, pp. 77-79; *Ibid.*, May 2, 1914, pp. 79-83.

# NEW YORK COTTON EXCHANGE,

**INSPECTION BUREAU.**

NEW YORK,.....191

Mr.....
INSPECTOR-IN-CHIEF.

The following is a report of Cotton inspected by me at.....

For account of.....

Request No ..... Passed..... Bales, Rejected..... Bales,

Weigher,..... Samples..... lbs.

.....
ASSISTANT INSPECTOR.

.....
SAMPLER.

REMARKS.

.....

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FORM 30 (front)

| DATE | OWNER | WAREHOUSE | INSPECTOR | SAMPLER |
|---|---|---|---|---|

| LOT | NUMBER | MARK | BALES | WEIGHT | GRADE | ALLOWANCES | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | COMP. | UN COMP. | WET | FOR BAGS |
| | | | | | | | | | |
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Form 30 (back)

Prior to 1909-1910 the grading organization of the New York and New Orleans exchanges differed widely, the latter having had a board of arbitrators to pass upon cotton when tendered for contract deliveries and assuming no official responsibility for the grades of the cotton. Since then, however, the New Orleans Cotton Exchange has adopted the New York plan, both exchanges having an official inspection bureau and an inspection fund, and both provide for the regular issue of inspection certificates. Their inspection organizations dif-

C 47895

Rejected _____ 19 at _____

For Account of _____

_____ INSPECTOR N. Y. C. EX.

| No. | Mark | Weight | Allowance | | Comp. | Un-comp. | Why Rejected |
|---|---|---|---|---|---|---|---|
| | | | Wet | Bagging | | | |
| | | | | | | | |
| | | | | | | | |
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Form 31

fer in details but the New York plan may be regarded as typical of both exchanges.

The owner of a lot of cotton received at New York, if desiring to "certificate" his cotton, notifies the inspection bureau to that effect and states the name of a licensed weigher. The inspector-in-chief thereupon details an assistant inspector and sampler to undertake the preliminary classification. Samples are drawn from both sides of each bale by the sampler, the bales are weighed both by the weighmaster and the assistant inspector, they are grouped into lots of roughly uniform grade, each bale is given a lot number, and those

which seem to be below any recognized grade are rejected. The rejection of bales by the assistant inspector is, however, not final, the rejected samples being passed upon by the classification committee.

The following reports are then made to the inspection bureau: (1) assistant inspector's report of cotton received

**Inspection Bureau, New York Cotton Exchange.**

*New York,* 191

Return of *Bales Inspected Cotton, weighed by order*

of at

| LOT NUMBER | MARK | BALES | WEIGHT | LOT NUMBER | MARK | BALES | WEIGHT |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

*Licensed Weigher.*

FORM 32

(Form 30), (2) report of cotton rejected (Form 31), and (3) a weighmaster's return of weights (Form 32).

The samples drawn from the bales are divided into two parts, and taken to the sample rooms where they are placed in papers and are opened and exposed to the air for twenty-four hours.[1] They are then compared by a member of the classification committee, and one set is retained at the sample room to remain there until the cotton is shipped or reclassed while the other or original sample is taken to the classification

[1] Rule as to length of exposure not always observed.

room. Both sets of samples are identified with a poster, the form of poster attached to the original set being reproduced in Form 33. Two members of the classification committee then pass on each lot of samples, a third being called in case of disagreement. In addition to their expert knowledge these graders have before them a standard set of working cotton types with which they may compare the samples. Upon arriving at

OFFICE OF INSPECTOR-IN-CHIEF

NEW YORK COTTON EXCHANGE

New York, _____ 19

Lot No. L _____ Mark _____

Samples of _____ Bales Cotton

Warehouse Independent Stores

Owner _____

Papers _____

FORM 33

a decision they enter their findings in a memorandum (Form 34), one copy of which is retained by the classification committee and the other given to the owner of the cotton.[1] The owner if dissatisfied may appeal from the original grading within ten days, in which case the duplicate set of samples which was retained at the sample room is submitted to the entire classification committee or to at least four members for final decision, their findings being entered in a memorandum

[1] Grades changed somewhat since Feb. 18, 1915. Correct grades shown in Form 10.

CLASSIFICATION COMMITTEE.
NEW YORK COTTON EXCHANGE

No._____

*New York,*_____*191*

*Classification of*_____*Bales Cotton*

*Submitted by* _____

*Mark*_____*Lot No.*_____

*Warehouse* _____

## GRADES.

_____ 1.75 on Fair

_____ [illegible] Strict Middling Fair

_____ [illegible] Middling Fair

_____ .90 on Strict Good Middling

_____ .75 on Fully Good Middling

_____ .65 on Good Middling

_____ [illegible] Barely Good Middling

_____ [illegible] Strict Middling

_____ .15 on Fully Middling

_____ Basis Middling

_____ .25 off Barely Middling

_____ .50 off Strict Low Middling

_____ [illegible] Fully Low Middling

_____ [illegible] Low Middling

_____ [illegible] Strict Good Ordinary

_____ [illegible] Good Ordinary

_____ .45 on Strict Good Middling Tinged

_____ Value of Mid. Good Middling Tinged

_____ [illegible] Strict Middling Tinged

_____ [illegible] Middling Tinged

_____ [illegible] Strict Low Middling Tinged

_____ 3.00 off Low Middling Tinged

_____ 1.25 off Middling Stained

_____ BALES COMPRESSED

_____ BALES UNCOMPRESSED

Total Bales _____

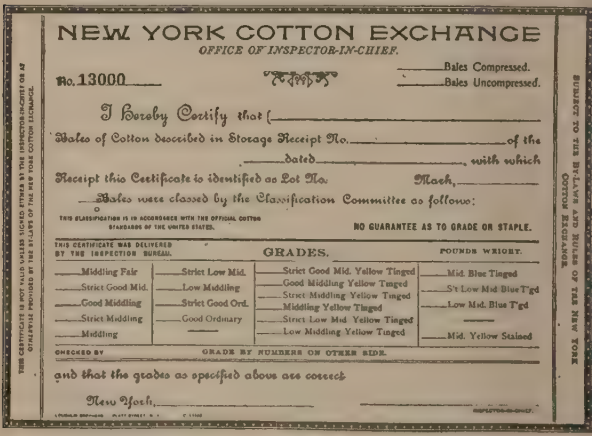
_____

_____ *Committee.*

_____

FORM 34

slip similar in form to the memorandum reproduced i Form 34. When the grades are finally established the inspec tor-in-chief issues an official certificate (Form 35) which i guaranteed by the exchange and is used in the making o deliveries. This certificate covers the grade for one year unless the cotton is meanwhile withdrawn from the ware house for shipment or unless the person to whom the cotton is delivered requests a reclassification. Any reduction o



NEW YORK COTTON EXCHANGE

OFFICE OF INSPECTOR-IN-CHIEF.

No. 13000 ____ Bales Compressed. ____ Bales Uncompressed.

I Hereby Certify that (_____

Bales of Cotton described in Storage Receipt No. _____ of the _____ dated _____, with which

Receipt this Certificate is identified as Lot No. _____ Mark, _____

Bales were classed by the Classification Committee as follows:

THIS CLASSIFICATION IS IN ACCORDANCE WITH THE OFFICIAL COTTON STANDARDS OF THE UNITED STATES.

NO GUARANTEE AS TO GRADE OR STAPLE.

THIS CERTIFICATE WAS DELIVERED BY THE INSPECTION BUREAU.

GRADES.

POUNDS WEIGHT.

| | | | |
|---|---|---|---|
| ____Middling Fair | ____Strict Low Mid. | ____Strict Good Mid. Yellow Tinged | ____Mid. Blue Tinged |
| ____Strict Good Mid. | ____Low Middling | ____Good Middling Yellow Tinged | ____St. Low Mid. Blue T'gd |
| ____Good Middling | ____Strict Good Ord. | ____Strict Middling Yellow Tinged | ____Low Mid. Blue T'gd |
| ____Strict Middling | ____Good Ordinary | ____Middling Yellow Tinged | |
| ____Middling | | ____Strict Low Mid. Yellow Tinged | |
| | | ____Low Middling Yellow Tinged | ____Mid. Yellow Stained |

CHECKED BY _____ GRADE BY NUMBERS ON OTHER SIDE.

and that the grades as specified above are correct

New York, _____

_____ INSPECTOR-IN-CHIEF.

THE CERTIFICATE IS NOT VALID UNLESS SIGNED EITHER BY THE INSPECTOR-IN-CHIEF OR AT DEPUTIES PROVIDED BY THE BY-LAWS OF THE NEW YORK COTTON EXCHANGE.

SUBJECT TO THE BY-LAWS AND RULES OF THE NEW YORK COTTON EXCHANGE.

FORM 35.

grade in case of such reclassification entitles the receiver t draw upon the inspection fund of the exchange to the exten of such reduction, the fund being derived from the fees col lected by the inspection bureau.

Although, owing to the extensive sale of speculative futur contracts, an unusual amount of attention has for many year been given to the grading of grain and cotton, other farm staples are also classified and graded at some stage or othe of their distribution from producer to consumer. The pur chase and sale of livestock, wool, tobacco and fruit in th great spot markets for those commodities, the quotation o

spot prices and the granting of loans are greatly facilitated by grading.

### Commercial Classifying and Grading of Livestock

Livestock sold by growers to local dealers is seldom graded at the local markets, each animal or group being purchased by actual inspection on the part of the buyer. Those sold in the stockyards of the large central markets are likewise sold by actual inspection at the pens, but as formerly stated they are usually divided into "bunches" so as to attain approximate uniformity in "character and quality." This classification into "bunches" by commissionmen for the purpose of sale is a form of grading, but it is not conducted in accordance with fixed rules. The animals of any particular shipment are bunched in accordance with the views of the commissionman and the buyers as to number, sex, age, and often as to their quality for dressed meat, export, canning, curing, stocking, feeding or other purposes.

Classes and grades are also needed at the central markets for the quoting of livestock prices. The animals are not systematically classed and graded for this purpose, but from the sales which are made at the stockyards each market is able to publish prices in terms of classes and grades which are generally understood by the trade. There is, however, no uniformity either in the factors considered or in the terms used to designate the grades.

In quoting the prices of cattle, for example, a distinction is made between "native," "western," and "Texan" cattle, which constitute *classes* indicating in general their breed and the place where they are raised. Native cattle are bred and raised on the farms of the Central West, western cattle on the ranges and ranches of the Far West and Northwest, and Texan cattle on the ranges and ranches of the Southwest. Western and Texan cattle are further distinguished as to the method of preparation for market, terms such as grassers, corn-fed or hay-fed Texan or western, Montana-Texans or Wyoming-Texans (Texan-cattle which have grazed on western

ranges), Dakota natives (Dakota range cattle originating in Texas), etc., are frequently used in price quotations but without uniform practice and the distinctions between these classes are not sharp. Cattle are further classed according to sex and age. Thus the price quotations may be in terms of native steers, western corn-fed cows, etc. Any cattle, moreover, which are sold to feeders, stock growers, breeders or dairymen for fattening or stocking purposes are known as "feeders" or "stockers."

The various classes of cattle are sometimes, though not always, subdivided into *grades of quality* indicating difference as to weight, the amount of dressed beef obtainable from an animal of a given live weight, the quality of the dressed beef and the quality of the animal for canning, curing, export or other purposes. The grades usually recognized are fancy, prime, choice, good, medium, and rough. Thus the price may be quoted in terms of choice western corn-fed steers, prime native steers, or any other combination of class and grade.

The cattle grades are not generally found in the purchase records of the packing concerns who are the principal buyers. The packers commonly record their purchases in terms of the *classes* mentioned above, the records of one packing plant showing as many as twenty-two combinations of classes.[1] In giving orders to their cattle buyers, the packers and slaughterers also use terms such as "packers," "beef cattle," "butcher

[1] U. S. Bureau of Corporation: The Beef Industry, p. 90—the records of the Hammond Company at St. Joseph showing the following classes:

1. Native steers
2. Yearlings, baby beef
3. Branded natives
4. Branded
5. Native heifers
6. Heifers
7. Colorado heifers
8. Westerns
9. Western steers
10. Corn-fed westerns
11. Fed westerns
12. Texan steers
13. Fed Texan
14. Texan heifers
15. Texan cows
16. Stags
17. Steers
18. Cows
19. Rangers
20. Range cows
21. Hay fed
22. Fed

stock," "canners," "cutters," "strippers," "bulls," "calves," and "export," each term indicating a particular use of the animal for packing, local butcher, canning, curing, exporting or other purposes.[1]

## The Grading of Wool

Though much wool is purchased locally without being graded in any way, this staple is systematically classified and graded at the large central markets. The domestic wools of the United States are divided into *classes* according to their geographical origin, the usual territorial groups being (1) Ohio, Pennsylvania, and West Virginia; (2) Michigan and New York; (3) Kentucky and similar districts; (4) California; (5) Texas; (6) Oregon; (7) Montana, Wyoming and Idaho, the wool there grown being known as "territory" wool; (8) Utah; (9) Nevada; and (10) "pulled" wool which is the short wool removed from the skins after slaughter and originates mainly in the large packing centers. These territorial classes are further classified, according to the extent of their preparation for spinning, into "unwashed," "washed" and "scoured" wool.[2]

The various classes of domestic wool are variously divided in *grades*, in accordance with the relative amount of merino blood in the sheep, the coarseness or fineness of the wool fiber, the amount of foreign matter and grease or probable scouring percentage, the length of the fiber, their adaptation for combing or carding, and the time and frequency of shearing. The various classes of eastern wools, although they are not graded the same in every case, are usually divided into the following grades: (1) "picklock" or wool from the pure Saxony merino sheep, (2) XXX or wool resulting from the first cross of the Saxony with the ordinary merino sheep, (3) XX or wool from the full-blooded merino, (4) X or $\frac{3}{4}$ merino blood wool, (5)

[1] The classification and grading of sheep and hogs differ in detail but are similar in principle, the usual classes and grades being quoted in the daily press.

[2] *See* chap. x, p. 215.

$\frac{1}{2}$, $\frac{3}{8}$ and $\frac{1}{4}$ blood, indicating relative amounts of merino blood, (6) "fine delaine," or straight merino wool adapted to combing and usually $2\frac{1}{2}$ or more inches in length and (7) "braid" or coarse wool. The classes of western wool are variously graded in terms of numbers, terms of quality, adaptation for combing or carding ("staple" or "clothing"), spring or fall clip, 12-, 8- or 6-months' clip, or growth in particular territorial regions. The grades of pulled wool are stated in terms of letters and quality.

In the following table (No. XIII) of domestic and foreign wool classes and grades it should be noted that the relative prices of eastern wools are quoted on the washed or unwashed basis while those of western and pulled wools are quoted on the scoured basis. The table shows the classes and grades regularly in use in the Boston wool market.

## TABLE XIII

### Boston Classification of Wools[1]

#### DOMESTIC WOOLS

| Ohio, Pennsylvania and West Virginia | | | | | |
|---|---|---|---|---|---|
| Washed | | | Unwashed | | |
| XX & abv | | @ 27 | Fn. unwshed | | @ 22 |
| $\frac{1}{2}$ & $\frac{3}{8}$ blood | 26 | @ 26½ | Unmr'ble | 23½ | @ 24 |
| Fine del | | @ 27 | Fine del | | @ 23½ |
| $\frac{1}{4}$ bld | 25 | @ 26 | $\frac{1}{2}$ bld | 24 | @ 24½ |
| | | | $\frac{1}{4}$ & $\frac{3}{8}$ bld | 23½ | @ 24 |

| Michigan and New York | | | | | |
|---|---|---|---|---|---|
| Unwashed | | | Unwashed | | |
| Fine unwashed | 20 | @ 21 | $\frac{1}{2}$ bld | 23 | @ 24 |
| Fine del | 21½ | @ 22½ | $\frac{1}{4}$ & $\frac{3}{8}$ bld | 23 | @ 23½ |

| Kentucky and Similar | | | | | |
|---|---|---|---|---|---|
| $\frac{1}{2}$ bld | 23 | @ 24 | $\frac{1}{2}$ bld | 23 | @ 23½ |
| $\frac{3}{8}$ bld | 23 | @ 23½ | Braid cbg | | @ 20 |

| California (Scoured Basis) | | | | | |
|---|---|---|---|---|---|
| Sp'g north'n free & 12 mo. | 48 | @ 50 | S'th, 6 and 8 mos | 42 | @ 43 |
| Sp'g middle countries | 45 | @ 46 | Fall free | 43 | @ 44 |
| S'th, 12 mo | 43 | @ 44 | Fall defect | 35 | @ 37 |
| | | | Carbonized | 42 | @ 43 |

| Texas (Scoured Basis) | | | | | |
|---|---|---|---|---|---|
| Fine 12 mo | 55 | @ 57 | Fine Fall | 47 | @ 48 |
| Fine 8 mo | 50 | @ 52 | Georgia | 20 | @ 21 |

| Oregon (Scoured Basis) | | | | | |
|---|---|---|---|---|---|
| Staple, eastern No. 1 | 58 | @ 60 | Cloth, Eastern No. 2 | 49 | @ 50 |
| Staple, eastern, No. 2 | 55 | @ 56 | Val. No. 1 | 47 | @ 48 |
| Cloth, eastern No. 1 | 52 | @ 53 | Val. No. 2 | 44 | @ 45 |
| | | | Val. No. 3 | 40 | @ 41 |

[1] Prices as on May 7, 1914, at Boston. Textile Manufacturers' Journal, May 9, 1914.

MONTANA, IDAHO AND WYOMING (Scoured)

| | | | | | |
|---|---|---|---|---|---|
| Staple, fine | 58 | @ 60 | Fine cloth'g | 54 | @ 56 |
| Staple ½ bld | 53 | @ 54 | Fine Med | 50 | @ 53 |

UTAH (Scoured)

| | | | | | |
|---|---|---|---|---|---|
| Fine | 54 | @ 55 | Fine Med | 50 | @ 52 |

COLORADO AND NEW MEXICO (Scoured)

| | | | | | |
|---|---|---|---|---|---|
| Fine | 53 | @ 54 | No. 3 | 35 | @ 36 |
| No. 1 | 49 | @ 50 | No. 4 | 38 | @ 34 |
| No. 2 | 45 | @ 46 | | | |

NEVADA (Scoured)

| | | | | | |
|---|---|---|---|---|---|
| Fine cloth'g | 54 | @ 56 | Fine med | 50 | @ 52 |

PULLED

| Scoured | | | Scoured | | |
|---|---|---|---|---|---|
| Extra | 56 | @ 58 | C super | 32 | @ 36 |
| AA | 54 | @ 56 | Cbgs. fine | 52 | @ 53 |
| Fine A | 51 | @ 53 | Medium | 48 | @ 50 |
| A super | 48 | @ 50 | Coarse | 45 | @ 46 |
| B super | 40 | @ 43 | | | |

## FOREIGN CLOTHING AND COMBING WOOLS

AUSTRALIA (Scoured Basis)

| | | |
|---|---|---|
| *Victorian Combing:* | | |
| 70s | 65 | @ 66 |
| 64s | 61 | @ 63 |
| 60s | 57 | @ 59 |
| 56s 58s | 52 | @ 53 |
| 50s | 46 | @ 47 |
| 46s | 40 | @ 42 |
| 40s-44s | 36 | @ 37 |
| *New Zealand:* | | |
| 56s | 49 | @ 50 |
| 50s | 45 | @ 46 |
| 46s | 41 | @ 42 |
| 44s-46s | 38 | @ 39 |
| 40s-44s | 36 | @ 37 |
| 40s | 35 | @ 36 |
| 36s | 34 | @ 35 |

MONTEVIDEO (Greasy)

| | | |
|---|---|---|
| Lincoln | 23½ | @ 24 |
| ¾ bld | 25 | @ 26 |
| High do | 26 | @ 27 |
| ¾ bld | 28 | @ 29 |
| ½ bld | 29 | @ 30 |
| *Buenos Ayres—x-breds:* | | |
| Lincoln | | @ 23½ |
| ¼ bld | | @ 23½ |
| High ½ | 25 | @ 25½ |
| ¾ bld | | Nominal |
| *English and Irish:* | | |
| Shropshire | 32 | @ 33 |
| Sussex | 29 | @ 30 |
| Irish hogs | 30 | @ 31 |

## FOREIGN CARPET

| | | |
|---|---|---|
| *Aleppo:* | | |
| Washed | 27 | @ 28 |
| Washed col | 19 | @ 20 |
| *Angora* | 15 | @ 16 |
| *Aussa* | 23 | @ 25 |
| *Kurdi* | 23 | @ 25 |
| *Bokara:* | | |
| Whites | 19 | @ 20 |
| Colors | 14 | @ 15 |
| *China:* | | |
| Combing | 17 | @ 18 |
| Wshd clng | 25 | @ 26 |
| Wshd ball | 19 | @ 21 |
| Willowed | 18 | @ 21 |
| Unwld | 16 | @ 18 |
| *Cordova* | 15 | @ 17 |
| *Donskoi:* | | |
| Combing | 25 | @ 27 |
| *Georgian:* | | |
| Autumn | 20 | @ 20½ |
| *Khorassian:* | | |
| 1st clip | 19 | @ 20 |
| 2d clip | 20 | @ 21 |
| *Mongolian:* | | |
| Busk | 24½ | @ 25½ |
| Urga | 23 | @ 24 |
| Manchuria | 22 | @ 23 |
| *Scotch blk:* | | |
| Faced | 18 | @ 20 |
| Camel's hair (Rus'n) | 21 | @ 25 |
| *Serrian skin wools* | 21 | @ 23 |
| *East India:* | | |
| Gray | | @ 14 |
| *Washed:* | | |
| Vickaneer | 21 | @ 24 |
| Joria | 30 | @ 33 |
| Kandahar | 21 | @ 23 |
| Spring | 13½ | @ 15 |

## MOHAIR

| Domestic | | | Foreign | | |
|---|---|---|---|---|---|
| Combing | 30 | @ 33 | Turkey | 38 | @ 40 |
| Carding | 23 | @ 27 | Cape | 34 | @ 36 |

## Leaf Tobacco Grades

Leaf tobacco and fruits are distinctive in that they are frequently graded by the growers before they are sold. Owing to this practice, fruit grading has unavoidably been described in Chapter XII, and tobacco grading has been briefly referred to in Chapter XI.

As was previously mentioned the leaf tobacco trade recognizes distinct *classes and types* of leaf, the former being based upon its adaptation for a particular use, and the latter upon a combination of qualities such as color, strength, elasticity, body and flavor [1] or a particular method of curing the leaf. These types, however, are sorted into *grades* which represent varying degrees of excellence. As in the case of tobacco types, the properties considered in grading also include color, strength, elasticity, body and flavor, the difference being that the grader considers these properties in detail, and also includes properties such as the perfection of the leaves, whether they are torn, worm-eaten, bruised, or damaged from contact with the soil, their shape, thickness and length, and the part of the stalk from which they are stripped.

The following classification of the type known as bright yellow leaf when sold in the Danville, Virginia, market may be regarded as typical:

*Wrappers.*—1. Common wrappers: lowest grade of wrapper, and only a grade above a bright filler. 2. Medium wrapper: not uniform in color, dingy, or piebald, but of good form and quality. 3. Good wrapper: tobacco of heavy body, orange color, generally styled mahogany. 4. Fine wrapper: second grade of lemon color, but inferior to the fancy. 5. Fancy wrapper: fine, delicate fiber, silky, fresh lemon color, very leafy, perfect leaves, and the highest class made in assorting.

*Fillers.*—1. Common: all of the inferior and nondescript grades. 2. Medium: good, rich lugs, and the dark leaves with good body. 3. Good: tips, and the better and brighter heavy lugs and short leaves with body. 4. Fine: all the brightest, best and richest leaves next below common wrapper, and generally of a gray and cherry-red color.

[1] Chap. xi, p. 223.

*Smokers.*—1. Lowest grade: worm-eaten and discolored. 2. Brown and short leaves. 3. Grade above four, and not so colory. 4. Best smooth lugs, which make the highest class of smokers.

*Cutters.*—1. Thin, papery leaves, thrown out from fine fillers when assorting; lowest grade. 2. Same grade as three, but not so colory. 3. Fine cutters, leafy and inferior leaves taken from stalk that produced the best wrappers.

The number of grades differ widely for the various types of leaf tobacco produced and in different growing districts and markets. The grading may, moreover, be performed by different individuals—by the grower, the packer, jobber, exporter, public inspector, warehouseman or commissionman. It may be done by the grower in the first instance, later to be regraded by packers or other leaf buyers, and it may also be sold by the grower in the ungraded condition, later to be prepared, graded and packed by the buyers in such manner as they prefer or as their market requires.

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# CHAPTER XIV

## COLLECTION AND DISSEMINATION OF CROP REPORTS

A highly important part of the organization of American commerce, particularly of that phase which deals with the sale and distribution of the agricultural staples, is the extensive machinery which has been developed for the collection and dissemination of crop reports. Carriers may be provided to transport the crops to market; local, central and retail markets, elevators and warehouses, exchanges and other market places to facilitate their storage, preparation and sale; but without authentic current trade information the machinery of distribution could not but operate in a haphazard manner, and prices would seldom, if ever, be such as the actual or probable supply and demand naturally warrant.

From the standpoint of their sources, crop reports may be divided into two groups: (1) those issued by the federal and state governments, and (2) those issued by private organizations. The former include the reports published by the United States Department of Agriculture and the Census Office, and the latter those issued by certain trade journals, exchanges and private statistical organizations. In addition to these public crop reports, there are many strictly private reports which are obtained by large dealers, speculators or others, either directly or through private statistical sources, but, although such reports may at times exert a wide influence upon prices, they are not available to the multitude of producers, dealers and consumers who obtain much of their current trade information from such crop reports as are publicly issued.

## Government Crop Reports

**Purpose of Government Crop Reports.**—As early as 1863 when the Department of Agriculture first appointed a statistician for the collection of agricultural statistics, and 1865 when the first appropriation of $20,000 for the express purpose of issuing crop reports was made, it was felt that there was a distinct need for systematically collected crop information and reports. Even prior to 1863—during the period 1839 to 1862—certain crop statistics had been collected in the United States Patent Office. The crop-reporting service of the Department of Agriculture was for many years conducted by the Bureau of Statistics with an annual appropriation of about $225,000. Since June, 1914, it has been conducted by the Bureau of Crop Estimates, the appropriation for the fiscal year 1915 being $275,580. In justification of this expenditure the department points to the following purposes of its crop-reporting service:

1. To provide reliable information to producers, consumers and dealers as to actual yields and conditions of crops outside of their own immediate community.

2. To enable market centers to better balance supply against demand in defining what prices are warranted by natural conditions.

3. To insure stability to the extent that it is permitted by natural conditions.

4. To insure so certain an estimate that interested parties cannot discredit or swamp the government reports with their own private estimates.

5. To enable producers to know the facts as to the promise of prices so that they may not be led to sell at prices wrongfully quoted too low.

6. To create confidence and certainty in general business conditions, to the extent that such conditions are influenced by the country's crops.

7. To insure reports so frequently and so soon after changes have occurred in crop conditions or yields that speculative uncertainty may be reduced to a minimum.

8. To provide information which will be of use to the carriers in the distribution of freight equipment before and during the crop-moving seasons.

9. To assist farm implement, hardware and other manufacturers, and wholesale, jobbing, and retail merchants in so far as the production and distribution of their wares may depend upon the farming population.

**Organization of Crop-reporting Service of Department of Agriculture.**—The value of the crop-reporting service lies chiefly in the vastness of its sources of information, the disinterested character of the Bureau of Crop Estimates, and the frequency and promptness with which the crop reports are issued. A brief outline of the organization and methods of the service will serve to show why its crop reports, although admittedly but estimates, are eagerly awaited by the agricultural trades and exert a widespread influence on the price of the agricultural staples.

The monthly estimates of the bureau are based upon reports received from a huge number of correspondents located in all the farming and agricultural trade communities of the United States, and upon a smaller number of expert reports received from special field and state statistical agents. Its sources of crop information may be classified as follows:[1]

1. Reports are received from about 32,000 *township correspondents,* who are farmers residing in the farming townships throughout the country. Their reports are made voluntarily and without pay on printed blanks mailed to them by the Bureau of Crop Estimates.

2. Similar voluntary reports are received from about 3,800 principal *county correspondents,* who differ from the former in that they report for an entire county instead of their immediate vicinity or township. They make their report on printed blanks such as are shown in Forms No. 36 and 37 and obtain their information from personal observation and from voluntary reports received from two to four so-called "county aids" or assistants.

[1] U. S. Bureau of Crop Estimates, Government Crop Reports, Circular 17, revised, pp. 14-15.

3. The Bureau sends special blanks to a large list of *special correspondents* who are not necessarily farmers but who are nevertheless in a position to furnish valuable information. Thus in the grain trade it sends blanks requesting information on particular matters to about 30,000 millers, elevatormen and warehousemen, grain dealers and grain carriers, and in the cotton trade it similarly requests information from over 25,000 ginneries, 15,000 bankers, merchants, factors, exporters and other buyers, warehousemen, southern cotton mills, and railroad agents. In making estimates of cotton yields, moreover, blanks requesting a statement of the amount of their own particular output are sent direct to over 84,000 cotton growers.

4. The bureau regularly receives reports from a limited number of *special field agents* who are crop experts and are salaried employees of the government. Each of them travels throughout the farming district in which he is stationed, receives reports from correspondents on special blanks provided for that purpose, and at stated times sends expert reports to the bureau separately for each state located within his reporting district.

5. The bureau also receives reports from so-called *state statistical agents* of whom there is one for each state or group of smaller states. They are persons who devote a part of their time for a small salary of from $300 to $1,100 per year to reporting for each state as a whole the same information as is asked of township and county correspondents. They receive reports from about 15,000 voluntary local correspondents to whom they mail printed blanks, and they send the average for each state to the bureau as an independent estimate. Those in the larger states divide their state into about nine sections for each of which they compute a straight average, and then compute a weighted average for the entire state by assigning to each section a weight proportionate to its relative importance.

As the reports of township, county and special correspondents are received by the Bureau of Crop Estimates they are tabulated on large sheets so as to make them available to the

Crop Reporting Board which makes the final estimates. In order to prevent a clerk from obtaining advance knowledge as to any particular state each sheet before the figures are added and averaged is cut into two parts so that no names or marks indicating the state to which the estimates belong remain, and the part containing the names of the counties and state is kept in a locked drawer by the chief of division. The reports from the special field agents and state statistical agents, which are of particular importance, are mailed to the Secretary of Agriculture in special envelopes or telegraphed to him in cipher to be kept in a locked safe until the morning of the report. The Crop Reporting Board before which all the necessary information concerning the speculative crops is finally placed consists of five experts including the Chief of the Bureau who is the permanent chairman and four others who differ from month to month. The board works in a locked room having no telephone or other outside connection, and the final results are given simultaneously to the telegraph companies, reporters and all applicants to be conveyed to the exchanges, the press and to all interested parties. As is stated by one of the statisticians of the crop-reporting service:[1]

When the board has assembled, the reports regarding the speculative crops from state and field agents are delivered by the Secretary, opened and tabulated. The figures by states, from the several classes of correspondents and agents, are placed in convenient parallel columns, a separate sheet being used for each separate crop or question. The board is thus provided with several estimates for each state and each crop, made independently by the respective classes of correspondents and agents of the bureau. Notes and comments of agents and weather reports are read. With all these data before the board, each individual member computes independently, on a separate sheet, or final computation slip, his own estimate of the acreage, condition, yield, or whatever subject is being considered. The results obtained by each member are brought together and compared, state by state, and discussed by the board under the

[1] N. C. Murray: "The Crop Reporting System," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 98.

supervision of the chairman, and the final figures for each state decided upon. The estimates by states, as finally determined by the board, are weighted by figures proportionate to their relative importance, the results being a true weighted average for the United States for each subject. Other crops than wheat, corn, oats, and cotton are prepared in the same way except that the entire board does not review them.

As quickly as the board determines upon the final figures by states and the averages for the United States have been obtained by expert computers, a summary is set up on a duplicating machine, and copies of the summary are given to the public.

About two thousand copies of the summarized estimates are immediately mailed to newspapers and organized bodies interested in the crop reports. The final estimates are also immediately telegraphed to the Weather Bureau station director of each state, who has copies printed and mailed to all the local newspapers in the state. The details of the crop reports are, however, published a little later in a bulletin known as "The Monthly Crop Report" which is mailed gratis to any person upon request.[1]

**Scope of Crop Reports of Department of Agriculture.**—The crop reports cover a wide variety of information, the nature of which naturally varies in different seasons of the year. The principal returns, however, are those relating to:

1. The acreage planted, which is stated by the bureau in terms of acres, but is computed from the estimated percentages reported by its agents and correspondents, the percentages representing increases or decreases as compared with the previous year.

2. The condition of the crops, which is reported alike by the bureau and its agents and correspondents in percentages based upon a normal crop of 100 per cent.

3. The yield per acre, which is reported alike by the bureau and its agents and correspondents in terms of bushels, pounds or other units of quantity per acre.

[1] Until 1913 this bulletin was known as the "Crop Reporter," after which until May, 1915, it was known as "The Agricultural Outlook."

4. The total production, which is computed by multiplying the estimated yield per acre by the estimate acreage.

5. The average prices per bushel, pound or other unit received by producers, which are compiled by the bureau from special reports received from its agents and correspondents.

6. The total farm value of given crops, which is computed by multiplying the estimated production by the estimated average prices.

7. The stocks on hand at given times, which are computed by the bureau from the reports received from its agents and correspondents who report this information in estimated percentages of the total crop harvested.

8. The amounts shipped out of the county of production, which are computed in the same manner as the stocks on hand, and which indicate the estimated volume of grain, cotton or other crops reaching the country's markets.

The reports dealing with wheat, corn, oats and cotton are issued in greatest detail and with the strictest regularity, but the crop-reporting service also covers a multitude of other farm commodities such as barley, rye, buckwheat, flaxseed, peas, rice, tobacco, grass seeds, potatoes, sweet potatoes, beet and cane sugar, cattle, hogs, sheep, horses and other livestock, hay, wool, and to a more limited extent fruits and vegetables.

The crop reports of the Bureau of Crop Estimates are supplemented by the reports of the Weather Bureau, which is also in the Department of Agriculture. The Monthly Weather Review of this bureau contains concise statements as to the weather conditions throughout the crop-growing districts, the damage resulting from drought, excessive rainfall, frost and like conditions, temperature and precipitation with departure from normal values, etc., and at times exerts important effects upon the prices of the agricultural staples.

**Returns of United States Census Office.**—Since the crop reports of the Department of Agriculture are based upon the judgments and opinions of its agents and correspondents the statistics contained in them, although of great value, are but estimates. It is desirable, therefore, that certain of its returns, particularly those concerning production and acreage,

should occasionally be checked up by an actual canvass. This is done by the Census Office, the returns of which are accepted by the Bureau of Crop Estimates as a basis for revising its estimates.

The Census Office is especially active in reporting the cotton crop: (1) Beginning in June, it reports the estimated cotton acreage as of May 25th. (2) Thereafter it issues ten preliminary bi-monthly reports of the cotton ginned to specified dates. (3) It issues monthly reports of cotton consumed, imported, exported and on hand and of the number of active cotton spindles, and (4) three reports of cotton-seed crushed and linters produced. (5) In an annual bulletin entitled "Cotton Production" it reports in detail the total output of cotton and linters in the United States as reported by ginners and delinters, the total output of foreign cotton-producing countries, and the consumption, exports, imports and stock of cotton in the United States for specified periods. (6) It also issues an annual bulletin entitled "Supply and Distribution of Cotton" showing the total supply of cotton in the United States for the year ending August thirty-first and its distribution, together with statistics of spindles, consumption, stocks on hand, imports and exports, and certain statistics of spindles and cotton consumption and textile fiber production in foreign countries. The census returns are obtained mainly by actual canvass of the ginneries, delinters, dealers and merchants, warehousemen, cotton mills and other concerns handling cotton, each reporting on the volume of its own business. The returns of exports and imports used in its reports on supply and distribution are, however, compiled from reports of the Bureau of Foreign and Domestic Commerce of the Department of Commerce which obtains them from the customs records.

Once in each decade the Census Office also makes a canvass of other agricultural crops, reporting for each a detailed statement of acreage, production, total farm value, average yield per acre, average farm value per bushel or other unit of quantity, and in some instances additional information. These census returns, particularly those of acreage and production, serve as a check upon the current crop reports of the Depart-

ment of Agriculture, and are used by that department as a means of periodically revising its estimates.

**United States Bureau of Foreign and Domestic Commerce.**—The official returns of the exports and imports of farm products—their value, volume, ports of shipment and receipt, countries to which exported and from which imported—are annually compiled and published in the United States Commerce and Navigation Report by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. This bureau also publishes less detailed monthly returns of exports and imports in the Monthly Summary of Commerce and Finance. Its reports are compiled from the records of the United States Customs Office of the Treasury Department.

**State Reports.**—The departments, bureaus, boards or commissioners of agriculture, horticulture or dairying of many of the principal farming states compile and publish statistics of the agricultural industries within particular states. Their reports, however, are usually annual, and their scope is in most cases limited to acreage, crop production, livestock on farms, production of dairy products or other annual returns. The grain inspection departments, warehouse registrars, railroad and warehouse commissions or public service commissions of some of the western agricultural states also publish annual reports showing the number of cars or amount of grain publicly inspected, the receipts and shipments of grain to and from elevators and central grain markets, and other data arising in connection with their supervision of the grain trade.

### Crop Reports of Private Organizations

**The Visible Supply.**—Among the most important privately collected crop statistics are those concerning the "visible supply" of cotton and the cereals, i. e., the stocks of cotton and grain which have gone out of the hands of the producers and are in elevators, warehouses, vessels or other places where they are available for commercial purposes. The visible supply is of vast importance between harvesting sea-

sons for it then constitutes the principal basis of the cotto
and grain trades. The visible supply is due to various cause
and performs the following important functions:

1. Many growers because of inability to handle or financ
their crop or for other reasons sell the bulk of their grain an
cotton during or shortly after the harvesting season.

2. The competition existing between primary market
and points of concentration tend to draw grain and cotto
from the farms and local markets.

3. Central elevators and warehousemen usually desir
their elevators and warehouses to be filled, and the existenc
of these storage places makes possible a large visible supply.

4. Future trading is particularly dependent upon th
visible supply.

5. The visible supply strengthens the consumers' posi
tions, by assuring them that certain quantities of cotton o
grain are available to satisfy their needs.

Visible supply returns are collected mainly by some of th
large commercial journals through correspondents stationed
at all the principal points of accumulation, and are currently
compiled and published by them. The visible supply of cotto
on August 28, 1914, for example, was reported by the *Com
mercial and Financial Chronicle* as is shown on page 303.

**Other Privately Collected Crop Information.**—Variou
*trade journals* similarly collect and publish current statement
showing the concentration of cotton and grain at interio
points and seaboard ports, their shipment over various routes
their exportation and home consumption and other items
showing their movement and distribution. Some likewis
maintain corps of correspondents or otherwise estimate statis
tics of acreage, condition, and production similar to those col
lected by the Department of Agriculture, the private com
pilations often anticipating the government crop reports.[1]

Some of the large *cotton and grain exchanges* also are im

[1] Some of the principal journals and newspapers collecting crop reports are the *New York Journal of Commerce, The New York Com
mercial*, the *Financial* and *Commercial Chronicle, Bradstreet's*, and *The New Orleans Times-Democrat.*

The visible supply of cotton tonight, as made up by cable and telegraph, is as follows: Foreign stocks, as well as the afloat, are this week's returns, and consequently all foreign figures are brought down to Thursday evening. But to make the total the complete figures for tonight (Friday), we add the item of exports from the United States, including in it the exports of Friday only.

| | 1914 | 1913 | 1912 | 1911 |
|---|---|---|---|---|
| August 28 | | | | |
| Stock at Liverpool.....bales | 890,000 | 573 000 | 600,000 | 443 000 |
| Stock at London | 5,000 | 5,000 | 11,000 | 12,000 |
| Stock at Manchester | 65,000 | 26,000 | 73,000 | 27,000 |
| Total Great Britain | 960,000 | 604,000 | 684,000 | 482,000 |
| Stock at Hamburg | *29,000 | 17,000 | 10,000 | 11,000 |
| Stock at Bremen | *240,000 | 105,000 | 213,000 | 28,000 |
| Stock at Havre | 230,000 | 82,000 | 100,000 | 56,000 |
| Stock at Marseilles | 4,000 | 3,000 | 2,000 | 2,000 |
| Stock at Barcelona | *25,000 | 15,000 | 16,000 | 17,000 |
| Stock at Genoa | 21,000 | 9,000 | 14,000 | 16,000 |
| Stock at Trieste | *40,000 | 17,000 | 10,000 | 7,000 |
| Total Continental stocks | 589,000 | 248,000 | 365,000 | 140,000 |
| Total European stocks | 1,549,000 | 852,000 | 1,049,000 | 622,000 |
| India cotton afloat for Europe | 170,000 | 89,000 | 67,000 | 33,000 |
| Amer. cotton afloat for Europe | 23,773 | 92,850 | 113,059 | 170,656 |
| Egypt, Brazil, &c., afloat for Europe | 19,000 | 32,000 | 31,000 | 21,000 |
| Stock in Alexandria, Egypt | *88,000 | 65,000 | 32,000 | 42,000 |
| Stock in Bombay, India | 686,000 | 594,000 | 454,000 | 426,000 |
| Stock in U. S. ports | 224,459 | 205,634 | 284,819 | 196,898 |
| Stock in U. S. interior towns | 116,469 | 109,328 | 93,881 | 102,226 |
| U. S. exports today | ..... | 10,497 | 826 | 52,947 |
| Total visible supply | 2,876,701 | 2,050,309 | 2,126,585 | 1,662,727 |

Of the above, totals of American and other descriptions are as follows:

| | 1914 | 1913 | 1912 | 1911 |
|---|---|---|---|---|
| AMERICAN | | | | |
| Liverpool stock.....bales | 602,000 | 376,000 | 472,000 | 259,000 |
| Manchester stock | 16,000 | 15,000 | 56,000 | 16,000 |
| Continental stock | *150,000 | 203,000 | 336,000 | 91,000 |
| American afloat for Europe | 23,773 | 92,850 | 113,059 | 170,656 |
| U. S. port stocks | 224,459 | 205,634 | 285,819 | 196,898 |
| U. S. interior stocks | 116,469 | 109,328 | 93,881 | 102,226 |
| U. S. exports today | ..... | 10,497 | 826 | 52,947 |
| Total American | 1,462,701 | 1,012,309 | 1,357,585 | 891,727 |
| EAST INDIAN, BRAZIL, &c. | | | | |
| Liverpool stock | 288,000 | 197,000 | 128,000 | 184,000 |
| London stock | 5,000 | 5,000 | 11,000 | 12,000 |
| Manchester stock | 19,000 | 11,000 | 17,000 | 11,000 |
| Continental stock | *139,000 | 45,000 | 29,000 | 46,000 |
| India afloat for Europe | 170,000 | 89,000 | 67,000 | 33,000 |
| Egypt, Brazil, &c., afloat | 19,000 | 32,000 | 31,000 | 21,000 |
| Stock in Alexandria, Egypt | *88,000 | 65,000 | 32,000 | 42,000 |
| Stock in Bombay, India | 686,000 | 594,000 | 454,000 | 422,000 |
| Total East India, &c. | 1,414,000 | 1,038,000 | 769,000 | 771,000 |
| Total American | 1,462,701 | 1,012,309 | 1,357,585 | 891,727 |
| Total visible supply | 2,876,701 | 2,050,309 | 2,126,585 | 1,662,727 |

* Estimated

The visible supply of American and Canadian Grain o August 22d, 1914, was similarly reported in the followin form:

The visible supply of grain, comprising the stocks in granary at principal poin of accumulation at lake and seaboard ports August 22, 1914, was as follows:

UNITED STATES GRAIN STOCKS

| | Amer. Wheat bush. | Bonded Wheat bush. | Amer. Corn bush. | Amer. Oats bush. | Bonded Oats bush. | Amer. Rye bush. | Amer. Barley bush. | Bonde Barle bush |
|---|---|---|---|---|---|---|---|---|
| In Thousands | | | | | | | | |
| New York | 1,698 | 34 | 27 | 472 | 33 | 21 | 89 | .... |
| Boston | 348 | ..... | 5 | 3 | ..... | 2 | 1 | .... |
| Philadelphia | 1,292 | 32 | 46 | 221 | ..... | ..... | ..... | .... |
| Baltimore | 2,697 | ..... | 14 | 278 | ..... | 8 | 2 | .... |
| New Orleans | 2,932 | ..... | 86 | 195 | ..... | ..... | ..... | .... |
| Galveston | 2,545 | ..... | 10 | ..... | ..... | ..... | ..... | .... |
| Buffalo | 1,133 | 104 | 164 | 1,316 | ..... | 5 | 105 | .... |
| Toledo | 1,139 | ..... | 68 | 755 | ..... | 3 | ..... | .... |
| Detroit | 329 | ..... | 75 | 314 | ..... | 12 | ..... | .... |
| Chicago | 6,268 | ..... | 448 | 10,311 | ..... | 49 | 30 | .... |
| " afloat | 447 | ..... | 288 | 223 | ..... | ..... | ..... | .... |
| Milwaukee | 152 | ..... | 42 | 349 | ..... | 3 | 180 | .... |
| Duluth | 422 | 17 | ..... | 54 | 10 | 39 | 239 | |
| Minneapolis | 1,265 | ..... | 2 | 378 | ..... | 8 | 133 | .... |
| St. Louis | 3,233 | ..... | 49 | 280 | ..... | ..... | ..... | .... |
| Kansas City | 4,379 | ..... | 167 | 231 | ..... | 22 | ..... | .... |
| Peoria | 18 | ..... | 36 | 1,559 | ..... | 5 | ..... | .... |
| Indianapolis | 777 | ..... | 118 | 543 | ..... | ..... | ..... | .... |
| Omaha | 860 | ..... | 258 | 1,044 | ..... | 3 | 22 | .... |
| On Lakes | 895 | ..... | 284 | 277 | ..... | ..... | ..... | .... |
| On Canal & River | 198 | ..... | 9 | 87 | ..... | ..... | ..... | .... |
| Totals: | | | | | | | | |
| Aug. 22 1914 | 33,027 | 187 | 2,196 | 18,890 | 43 | 180 | 801 | |
| Aug. 15 1914 | 33,885 | 338 | 2,070 | 15,593 | 67 | 183 | 880 | |
| Aug. 23 1913 | 14,689 | 760 | 2,617 | 22,500 | 447 | 691 | 1,454 | 8 |
| Aug. 24 1912 | 18,663 | 1,185 | 1,573 | 3,151 | 66 | 288 | 475 | |

CANADIAN GRAIN STOCKS

| | Can'd'n Wheat bush. | Bonded Wheat bush. | Can'd'n Corn bush. | Can'd'n Oats bush. | Bonded Oats bush. | Can'd'n Rye bush. | Can'd'n Barley bush. | Bonde Barle bush |
|---|---|---|---|---|---|---|---|---|
| In Thousands | | | | | | | | |
| Montreal | 4,733 | ..... | 38 | 470 | ..... | 23 | 128 | .... |
| Ft. William & Pt. Arthur | 1,161 | ..... | ..... | 102 | ..... | ..... | ..... | .... |
| Other Canadian | 2,457 | ..... | ..... | 880 | ..... | ..... | ..... | .... |
| Totals: | | | | | | | | |
| Aug. 22 1914 | 8,351 | ..... | 38 | 1,452 | ..... | 23 | 128 | .... |
| Aug. 15 1914 | 10,010 | ..... | 59 | 1,926 | ..... | 23 | 186 | .... |
| Aug. 23 1913 | 4,001 | ..... | 11 | 6,454 | ..... | 33 | 501 | .... |
| Aug. 24 1912 | 5,686 | ..... | 6 | 2,821 | ..... | ..... | 5 | .... |

SUMMARY

| | Wheat bush. | Bonded Wheat bush. | Corn bush. | Oats bush. | Bonded Oats bush. | Rye bush. | Barley bush. | Bonded Barley bush. |
|---|---|---|---|---|---|---|---|---|
| In Thousands | | | | | | | | |
| American..... | 33,027 | 187 | 2,196 | 18,890 | 43 | 180 | 801 | 7 |
| Canadian..... | 8,351 | ..... | 38 | 1,452 | ..... | 23 | 128 | ..... |
| Totals: | | | | | | | | |
| Aug. 22 1914 | 41,378 | 187 | 2,234 | 20,342 | 43 | 203 | 929 | 7 |
| Aug. 15 1914 | 43,895 | 338 | 2,129 | 17,519 | 67 | 23 | 1,066 | 7 |
| Aug. 23 1913 | 48,690 | 760 | 2,628 | 28,954 | 447 | 724 | 1,955 | 83 |
| Aug. 24 1912 | 24,349 | 1,185 | 1,579 | 5,972 | 66 | 288 | 480 | 11 |

portant reporting agencies. In the cotton trade the annual statistical reports of the secretaries of the New Orleans and New York exchanges, particularly those of the former, constitute valuable statements as to the actual movement and distribution of that portion of the cotton crop which is "in sight" up to the time of their issue. Most of the grain exchanges, moreover, compile and publish annual and current statistics covering their own dealings and the grain trade conducted at the centers in which they are situated, and some of them compile statistics covering larger areas and special items such as the visible supply and the movement and distribution of grain.

Allied to the exchanges are important *private reporting organizations*, which provide them with detailed current statistics concerning all conditions of interest to the trade. Broomhall's Agency, for example, the reportorial staff of which extends throughout the important grain-growing countries, acts as the reporting agency for all the largest grain exchanges in the world.[1]

Various *trade organizations* such as The National Wool Manufacturers Association and the Union Stock Yards Companies of the principal central livestock markets, compile valuable current statistics concerning the particular farm products in which they are interested. Similar also are the

[1] *See* Bruce D. Mudgett: "Current Sources of Information in Produce Markets." *The Annals of the American Academy of Political and Social Science*, Sept., 1911, pp. 115 118.

returns of the larger growers' coöperative marketing and ship ping associations which obtain current reports of market con ditions in accordance with which they consign or reconsign th products of their members.

There are also many *commission and brokerage houses* particularly in the grain trade, who "make a practice of can vassing the intelligent opinion of men located in the grai belt for the purpose of estimating the conditions of the grain the acreage, etc. A great many correspondents are in dail communication with their firms and are able to inform th latter of any circumstances of sufficient importance to justif a special investigation." [1]

Finally there are numerous *private crop experts* who are i the employ of large brokerage or commission houses or sel their information to subscribers. While some of them publish misleading reports for ulterior purposes, others are "men o mature judgment whose business it is to give disinterested and impartial advice on the growing crops and whose opinion can be depended upon to represent the facts as they know them." [1]

Allied to the crop statistics mentioned above are statistic of central market prices. The departments of Agriculture Labor and Commerce publish various compilations of th prices paid at the central markets, but the main sources o current price statistics are the exchanges, trade journals an daily newspapers. The prices paid on the large exchange are posted on bulletins, sent broadcast by telegraph, and regu larly published by the daily press.

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[1] *Ibid.*, pp. 118-119.

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(*See also* statistical reports listed on pp. 10, 11, 92, 93, 134, 35, 200, 201, 221, 238, 257.)

# CHAPTER XV

## THE INSURANCE OF AGRICULTURAL COMMODITIES

It is not the purpose of this chapter to describe proper insurance as an industry, but rather to outline the purpos and extent to which the agricultural crops are protected b insurance throughout their passage from farmer to consume The fire and other property insurance business as such—i organization, manner of quoting rates, etc.—and the insu ance of buildings, vessels and other trade facilities, are b indirectly related to the trade in farm products and ha been fully described elsewhere.[1] The insurance of farm com modities, however, holds a direct and highly important pos tion in commercial organization, the discussion of which ma be classified into (1) rural crop insurance, (2) insurance the basis of commodity loans, (3) the insurance of store commodities, (4) the insurance of commodities in mills, fa tories and mercantile establishments, (5) the insurance commodities en route, and (6) insurance as the basis financial settlement.

### Rural Crop Insurance

*Scope.*—There is much lack of uniformity among farme as regards the forms and extent of insurance carried by the It is a common practice for them to insure their home, far buildings, farm animals and machinery against loss by fi and lightning, but many neglect the insurance of their crop Indeed there are many risks, such as grain pests, frosts an drought, which are seldom covered by insurance in the Unite States because of the great severity of such calamities whe

[1] *See* S. S. Huebner: "Property Insurance" and the bibliogr phy contained therein.

ever they occur and the relative absence of concerns which underwrite such risks.

The most common form of crop insurance is the insurance against loss by fire and lightning of grain, cotton, hay and other products after they have been harvested and stored on the farmer's premises or in other local storage places. Many farmers, particularly the small cotton growers, seldom protect themselves in this way, but the growers of large crops as well as some of less importance regularly protect their harvested crops until they finally dispose of them.

In regions subject to heavy storms farmers in some cases protect their buildings as well as the crops stored in them by purchasing tornado, cyclone, and windstorm insurance.[1] Similarly in the western grain states farmers sometimes protect their crops against loss from hailstorms by taking out hail insurance policies.

Farm animals are frequently insured against loss from fire and lightning in many parts of the United States, but in those regions where livestock constitutes an important source of farm income livestock is also at times insured against loss from disease and accident. In case of the slaughter by federal or state veterinary inspectors of animals infected with contagious disease the owners are compensated jointly by the federal and state governments, but such compensation does not overcome the need for insurance, because it is based merely upon the animal's value for meat or other commercial purposes and not upon the real value of blooded stock. Much livestock, moreover, is lost otherwise than by order of public veterinary inspectors, and in the absence of insurance constitutes a complete loss to the owner.

Livestock insurance in the United States—that is, insurance covering disease and accident—is provided mainly by special mutual or regularly incorporated livestock insurance companies, and has not been developed on a large scale. The

[1] F. L. Hoffman: "Windstorm and Tornado Insurance," *Spectator*, vol. lxvii, p. 272; A. T. Linnby: "Tornado Insurance," ch. 65 in H. P. Dunham: The Business of Insurance; G. H. Powell: Coöperation in Agriculture, ch. 12.

policies issued usually protect the owner against loss by death from accident, disease, fire, lightning and cyclone, including accidents such as a "broken leg when found necessary by attending veterinary to destroy the animal's life." Some policies, however, specifically exempt the insurance company in case of loss resulting from certain causes such as fire, flood, inundation, snowstorm or blizzard unless otherwise agreed in a special policy clause and additional premiums are paid. The policies, moreover, generally limit the insured value or amount recoverable to one-half or two-thirds of the actual value of the animals insured or to fixed maximum valuations and prescribe a maximum age limit which varies with the kind of animal insured and the length of time during which protection is granted. In many instances the companies refuse to insure any livestock not kept in fenced-in pastures or other inclosures, thus eliminating range cattle. In spite of these precautions the risks of livestock insurance have proved so great that the premium rates charged have deterred the owners of common livestock from generally protecting themselves with insurance.

Livestock insurance in the United States has thus far been confined mainly to the insurance of horses and valuable blooded cattle. The number of outstanding policies on common dairy or beef cattle has always been small, and common sheep and hogs are seldom insured against loss from disease or accident. Growers of "common stuff" even in case of fenced in stock, have depended mainly upon such protection as is afforded by the regular fire and lightning insurance which they may carry, but relatively few insuring such stock against the greater risk of loss resulting from other accidents or from disease.

**Sources of Rural Insurance.**—Three groups of concerns provide most of the rural insurance. (1) At a recent date there were over 1,800 local mutual fire insurance companies in the United States, a large proportion of which are local coöperative farmers' associations. Similarly much of the farmers' tornado, cyclone, windstorm and livestock insurance is obtained through local mutuals. The usual plan is to re-

quire a small cash premium and in case their losses exceed their income to obtain the excess through a system of assessments. Although many local mutuals have failed, others have been successful in spite of the restricted volume of their business, lack of assets, and assessments, because the restricted area of their operation and personal acquaintance of their members tends to prevent overvaluation and to eliminate much of the moral hazard incident to property insurance.

(2) Various state mutuals have from time to time been organized for rural insurance. They cover an entire state, portions of several states or larger areas, and have the advantage of coming more nearly within the law of average. They have, however, been less successful than the local mutuals, because their operation over wider areas increases the moral hazard, incurs greater competition with established old line companies, inferior supervision over the selection of risks, and, when many assessments are called, widespread withdrawal of policyholders.[1]

(3) Farm risks, particularly fire and lightning, but to some extent also livestock and other forms of rural risks, are also insured in regular incorporated joint-stock insurance companies. Many of these companies do an extensive business both in cities and country districts and operate throughout wide areas.

(4) Farmers sometimes obtain insurance in the so-called Lloyd's associations consisting of "voluntary partnerships of groups of men in which each member agrees to hold himself individually liable for the payment of losses up to a specified amount." [2]

## Insurance as the Basis of Commodity Loans

The purpose of property insurance in many instances is the desire to obtain credit. In basing loans upon mortgages the farmers are required to insure any farm buildings or equipment which may be pledged, and insurance is similarly

[1] S. S. Huebner: Property Insurance, pp. 60-61.

[2] *Ibid.*, p. 65.

important when loans are based upon farm commodities. Farm loans secured by chattel mortgages on livestock sometimes require that the animals be insured; and loans based upon harvested crops usually require insurance against fire losses. Growing crops are less commonly insured and are, therefore, accepted as collateral for but a small fraction of their full value. Loans on stored farm commodities, which are secured mainly at the elevators and warehouses of the

No.....

.....

..... 19...

This certifies that ..... ha.. insurance by this company, under Policy No. ....., Entry No. ..... to the amount of ..... dollars, on .....

.....

terminating ..... day of ....., 19..., at noon.

Loss, if any, in conformity with the conditions of said policy, to be adjusted with..... and payable to ..... only on presentation of and surrender of this certificate.

Countersigned at Philadelphia, this ..... day of ....., 19...

....., Manager.

FORM 38

central markets where vast quantities of grain, cotton, wool, leaf tobacco and other farm products are stored, are almost invariably dependent upon fire insurance, for the bankers, warehousemen or commissionmen refuse to accept the elevator or warehouse receipts as collateral unless fire insurance policies or certificates are attached.

The insurance certificate, a copy of which is shown in Form No. 38, is a special device the main purposes of which are to facilitate commodity loans and financial settlement. A dealer may take out a general policy covering all the cotton

or other commodity purchased or stored by him during a given period and then issue certificates against it covering whatever amounts are pledged for loans or sold for shipment, thereby immediately protecting the bank making the loans, or the consignee. The policyholder may either present a certificate properly countersigned by an authorized insurance company official or issue it directly and request the company to later acknowledge its liability by letter, thus avoiding the delay and inconvenience incident to the issue of a new policy or the assignment of the interest in the policy each time a purchase or sale is made or a warehouse receipt is offered as collateral for a loan. Without either insurance certificates or policies the practice of loaning on farm commodities would be limited and the prevailing method of financing crops would be severely handicapped.

### The Insurance of Stored Commodities

Farm produce stored in elevators or warehouses is almost invariably insured against loss by fire when used to obtain credit, but it is usually insured even when not pledged as collateral, for its owner likewise desires protection. Farmers may sometimes neglect their insurance, but the dealers, commissionmen, jobbers, brokers and others who hold most of the products stored in the central markets are careful to avoid needless risks. The "Universal Schedule," for rating mercantile risks for example, contains a special "warehouse tariff," quoting insurance rates for over 1,400 commodities stored in warehouses, including nearly all the agricultural products suitable for storage. Each warehouse is assigned a basis rate dependent upon varying factors such as the city in which it is situated, structural materials, proximity to water mains, variety of commodities accepted, rules regarding admittance of employees only, smoking, arrangement of commodities, running aisles and the like. In addition each commodity is assigned a special stock rate in accordance with its inherent desirability as a fire risk. Thus a given grain warehouse or elevator may be assigned a basis rate of 20 cents per $100,

and grain stored in bulk an additional stock rate of 25 cents, making the total premium 20 plus 25 cents or 45 cents per $100 in contrast with a rate of 20 plus 40 or 60 cents on grain stored in cotton bags.

Dealers frequently carry a general policy covering every bale of cotton, bushel of wheat or other farm commodities stored within a stated period, the insurance company being informed each night as to the amount of the day's purchases and sales. Under this plan the dealer receives a premium bill from the company monthly or on agreed dates for the amount covered and the length of time it was insured.

The sources of fire insurance in case of farm products stored in central elevators or warehouses are principally (1) the regular joint-stock fire insurance companies, many of which underwrite a huge volume of fire insurance risks of all kinds and operate over wide areas; (2) special mutual concerns such as the Grain Dealers' National of Indianapolis and the Grain Dealers' Mutual Fire Insurance Company of Minneapolis, and (3) local fire insurance mutuals operating within the cities in which warehouses are located.

### Insurance of Commodities in Mills, Factories and Mercantile Establishments

Upon arrival at the mills, factories, wholesale or retail stores, auction warehouses or other places where the farm commodities are sold by actual inspection or are manufactured into finished products, they are again insured against loss by fire. Thus grain, cotton and wool are insured at flour and textile mills, and leaf tobacco at the tobacco factories and the auction warehouses of the South.

The insurance rates are higher than on similar commodities stored in elevators or warehouses because the fire risks are greater. The number of employees in mills, factories and stores is larger, many other persons frequent them, rules of conduct are more difficult of enforcement, and in some cases dust and other sources of inflammability are more likely to accumulate.

The principal sources of insurance at this stage in the life of the farm commodity are (1) the regular joint-stock fire insurance companies, (2) numerous so-called "factory mutuals" organized by factory and mill operators coöperatively with a view to reducing the cost of insurance, and (3) the usual local mutuals organized to insure city properties.

## Insurance of Commodities En Route

The extent to which farm products are insured while being transported depends largely upon the legal liability of the carrier, and this in turn differs widely according to whether they are being shipped by rail or water routes.

**Insurance of Railroad Shipments.**—Farm products shipped by rail in interstate commerce are seldom insured en route because the railroads are liable for all ordinary forms of loss, damage and unreasonable delay, subject only to such exemptions as are authorized by common law, the federal statutes and by the "uniform" and "standard" bills of lading.[1] The railroads are free from complete liability only under certain conditions: They are not liable for loss, damage or delay caused (1) by "the act of God, the public enemy, quarantine, the authority of law," "strikes or riots"; (2) by the act or default of the shipper or owner, or by requests to hold the freight in transit made by the shipper, owner or other party entitled to make such a request; and (3) by defects or vice in the freight itself. They are not liable for (4) differences in the weights of grain, seed or other commodities caused by natural shrinkage or discrepancies in elevator weights; or (5) for "deviation or unavoidable delays" resulting from the compression of cotton bales. (6) Their liability in case of freight shipped on open cars at request of the shipper is, in the absence of negligence, limited to loss or damage by fire. (7) Forty-eight hours after notice of arrival has been duly sent or given their liability as carriers ceases, and

[1] "Uniform" bill issued by northern and western carriers, and "standard" by the southern carriers.

thereafter they are liable for fire loss or damage only as warehousemen, i. e., they are exempted except in case of gross negligence. (8) Their liability as carriers has in the past been modified by agreements, special contracts, freight classifications, or tariffs definitely limiting the maximum amounts collectible, and the courts have held such value limitations to be valid on interstate shipments and have ruled that shippers refusing to accept these conditions may be required to pay freight charges in excess of those stated in the tariffs.[1] The so-called "Cummings Amendment" to the Interstate Commerce Act, which became effective on June 3, 1915, will, however, prevent interstate carriers from so limiting their liability in the future. It not only provides as did the "Carmack Amendment" of June 20, 1906, that the original carrier "shall be liable to the lawful holder of a receipt or bill of lading for any loss, damage or injury to property caused by it, or by any common carrier, railroad, or transportation company to which such property may be delivered," and that "no contract, receipt, rule, regulation, or other limitation of any character whatsoever, shall exempt such common carrier" from liability, but in addition provides that the original carrier shall be liable "for the *full actual loss, damage, or injury to such property caused by it or by any connecting carrier*"; and the Interstate Commerce Commission has interpreted this to mean that the carriers may neither limit their liability to the shipper nor automatically raise their rates to compensate themselves for the increased risks which the act imposes upon them.[2]

Interstate livestock shipments have in the past usually been made in accordance with the terms of the so-called limited liability or "uniform" livestock contract. In order to obtain the regular interstate livestock rates, the shippers were obliged to accept agreed maximum valuations, and to free the railways from liability as insurers and for loss, damage or de-

[1] Adams Express Co. *vs.* Croninger, 226 U. S. 491; Hart *vs.* P. R. R., 112 U. S. 331.

[2] *In Re* the Cummings Amendment, May 7, 1915, 33 I. C. C. Reports 682.

lay resulting from various causes. Such limitations will also after June 3, 1915, be prohibited by the Cummings amendment unless the courts should interpret the act favorably to the carriers.

In some states the liability of the railroads in case of intrastate shipments is similarly fixed by special state statutes prohibiting them from establishing agreed valuations or otherwise limiting their full liability as common carriers.

The liability of the rail carriers was so extensive in the case of all ordinary agricultural commodities, except livestock shipped under the limited liability contract, that they were seldom insured while en route even before the above-mentioned amendment to the federal liability laws. Those shippers, moreover, who did not wish to accept the limited risks imposed upon them in the uniform bill of lading could, upon payment of charges increased 10 per cent. above the regular freight rates, request the issue of a "special bill of lading" under the terms of which the railroads accepted full liability for loss, damage and unreasonable delay caused by them. Livestock shippers were similarly able to protect themselves fully by paying increased rates, but sometimes preferred to insure their animals against transit losses in the livestock insurance companies formerly mentioned in connection with rural insurance.

**Insurance of Marine Cargoes.**—The liability of steamship companies and other water carriers in case of loss or damage of freight cargoes differs widely from that of railroad carriers, and as a result a large marine insurance business has been developed. It is not intended to describe marine insurance as a business, but to discuss briefly those phases which directly concern the protection of cargoes and freight. The insurance of vessels and the working of marine insurance companies and of Lloyds and other marine underwriting associations have been fully described elsewhere.[1]

The liability of carriers by water is so limited that the shipper cannot hold them responsible for any of the usual

[1] *See* S. S. Huebner: Property Insurance, Part II—Marine Insurance.

risks encountered in marine shipping. Their bills of lading specify their freedom from liability in great detail, and the federal act of February, 1893, known as the Harter Act, stipulates that they are not liable except under certain specified conditions. The export bills of lading of ocean carriers are not uniform but the following liability clauses of the bill of lading issued by the American Line is typical:

IT IS MUTUALLY AGREED that the steamer shall have liberty to sail with or without pilots; that the carrier shall have liberty to convey goods in craft or lighters to and from the steamer at the risk of the owners of the goods; and, in case the steamer shall put into a port of refuge, or be prevented from any cause from proceeding in the ordinary course of her voyage, to transship the goods to their destination by any other steamer; that the carrier shall not be liable for loss or damage occasioned by fire from any cause or wheresoever occurring; by barratry of the master or crew; by enemies, pirates or robbers; by arrest or restraint of princes, rulers or people, riots, strikes, or stoppage of labor; by explosion, bursting of boilers, breakage of shafts, or any latent defect in hull, machinery or appurtenances, or unseaworthiness of the steamer, whether existing at time of shipment, or at the beginning of the voyage, provided the owners have exercised due diligence to make the steamer seaworthy; by heating, frost, decay, putrefaction, rust, sweat, change of character, drainage, leakage, breakage, vermin, or by explosion of any of the goods whether shipped with or without disclosure of their nature, or any loss or damage arising from the nature of the goods or the insufficiency of packages, nor for inland damage; nor for the obliteration, errors, insufficiency or absence of marks, numbers, address or description; nor for risk of craft, hulk or transshipment; nor for any loss or damage caused by the prolongation of the voyage, and that the carrier shall not be concluded as to correctness of statements herein of quality, quantity, gauge, contents, weight and value. General Average payable according to York-Antwerp Rules. If the owner of the steamer shall have exercised due diligence to make said steamer in all respects seaworthy and properly manned, equipped and supplied, it is hereby agreed that in case of danger, damage or disaster resulting from fault or negligence of the pilot, master or crew in the navigation or management of the steamer, or from latent or other defects, or unseaworthiness of the steamer, whether

existing at time of shipment, or at the beginning of the voyage, but not discoverable by due diligence, the consignees or owners of the cargo shall not be exempted from liability for contribution in General Average, or for any special charges incurred, but, with the shipowner, shall contribute in General Average, and shall pay such special charges, as if such danger, damage or disaster had not resulted from such fault, negligence, latent or other defects or unseaworthiness.

IT IS ALSO MUTUALLY AGREED that this shipment is subject to all the terms and provisions of, and all the exemptions from liability contained in, the Act of Congress of the United States, approved on the 13th day of February, 1893, and entitled "An Act relating to the navigation of vessels, etc."

IT IS ALSO MUTUALLY AGREED that the value of each package receipted for as above does not exceed the sum of one hundred dollars unless otherwise stated herein, on which basis the rate of freight is adjusted.

The Harter Act referred to in the bill of lading provides that the vessel owner is liable in case of loss or damage arising from (1) "negligence, fault, or failure in proper loading, storage, custody, care, or property delivery"; (2) from failure "to exercise due diligence, properly equip, man, provision and outfit" his vessel; (3) from failure to exercise due care in making his vessel "seaworthy and capable of performing her intended voyage." The vessel owner is not liable, however, for losses resulting from the unseaworthy condition of a properly inspected vessel even should it later appear that it was unseaworthy before leaving port, nor for losses resulting from errors of navigation, provided reasonable care was taken in providing the vessel's officers and crew.

The vessel owner being free from liability for loss resulting from the principal risks encountered at sea, it is important that the shippers insure their cargoes. They may, moreover, find it desirable to insure prepaid or collectible freight moneys, for ocean bills of lading in many cases contain a clause to the effect "that freight prepaid will not be returned, goods lost or not lost," and another providing "that full freight is payable on damaged or unsound goods."

The perils or risks against which protection is granted in marine insurance policies may be grouped as follows: (1) So-called "perils of the sea"; (2) fire; (3) jettison, i. e., the sacrificing in time of need of a portion of the cargo or vessel property for the common safety of the remainder; (4) barratry which in case of cargoes has reference mainly to theft by officers or crew; (5) losses resulting from men-of-war, enemies, pirates, rovers, thieves, reprisals, takings at sea, arrests, restraints, etc., which in present-day practice refers mainly to war risks; and (6) "all other perils, losses, and misfortunes that have or shall come to the hurt, detriment or damage of the vessel or cargo."

The usual cargo and freight policy does not protect the shipper against all possible perils, for the last-mentioned clause is not all-inclusive. It is interpreted so as to include only such other perils as are similar to those especially stated in the preceding policy clauses. The general cargo policy does not relieve the shipper from losses due to an inherent defect of the commodities shipped or resulting from natural deterioration, or wear and tear. Cargo policies, moreover, usually provide that no insurance will be paid unless the loss or damage to a particular commodity exceeds a stated percentage of its value.

It is possible, however, upon payment of increased premium rates demanded by the insurer, to attach special clauses to a marine policy, covering almost any conceivable peril, for "nowadays all sorts of clauses may be written into a policy of marine insurance, including loss from earthquakes, pilferage, and leakage of liquids; protection on the wharf while awaiting shipment, delivery, or transshipment; breakage, risks from the manufacturers' plant by inland rail through by transoceanic vessel and interior transportation to the warehouse of the consignee, and even risk by mule-back transport over the Andes." [1]

The losses which arise from the perils mentioned above may take various forms. (1) The loss may be a "total loss" either "actual" or "constructive." The former occurs when

[1] B. O. Hough: Ocean Traffic and Trade, p. 205.

the cargo is actually lost, completely destroyed, entirely removed from the possession of the owner, or so badly damaged as to be of practically no value. A constructive total loss of cargo occurs when the goods "fail to arrive at the port of destination, and when the cost of restoring any loss or damage and of forwarding the cargo to its final destination, amounts to more than the goods are worth after thus being repaired and forwarded," or when they are so situated that the expense of saving them would amount to more than their value after the expenditure is incurred.[1]

(2) In contrast with total losses, a partial loss of cargo or freight may occur, such losses being settled either in accordance with the "general average" or "particular average" rules. The maritime laws of nations provide that losses resulting from the voluntary and deliberate sacrifice of any interest for the common safety of the entire vessel, cargo and freight shall be prorated among all benefited interests, i. e., it shall be settled in accordance with the "general average" rule. When cargo, masts and rigging or other parts of vessels, for example, are thrown overboard, when the vessel is stranded, or, when in case of fire, water losses are suffered for the common good, all parties gaining by the sacrifice must bear a proportionate share of the loss incurred.

(3) A partial loss of cargo or freight may also result from an accident as distinct from one resulting from an order given by the vessel's master, in which case the "particular average" rule is applied. Commodities may, for example, be damaged by coming in contact with sea water or they may be crushed during a storm. Such losses are not sustained for the common safety; they concern none but those especially interested in the damaged commodities and those alone are obliged to bear whatever loss or damage is incurred. Marine policies frequently do not cover such loss unless it exceeds an agreed percentage of its value.

(4) A partial loss may also be declared as a result of salvage which is the amount granted by law and custom to third parties for the saving of life and property at sea. Such

[1] S. S. Huebner: Property Insurance, p. 303.

losses are apportioned among all the benefited interests as in case of general average.

There are many different types of cargo and freight policies, for there are many underwriting associations and companies and widely varying needs. Thus there are general "cargo," "lake cargo," "river cargo," "cotton," "freight," "war risk," etc., policies. A copy of a typical general cargo policy issued by an American company is reproduced in Form No. 39.

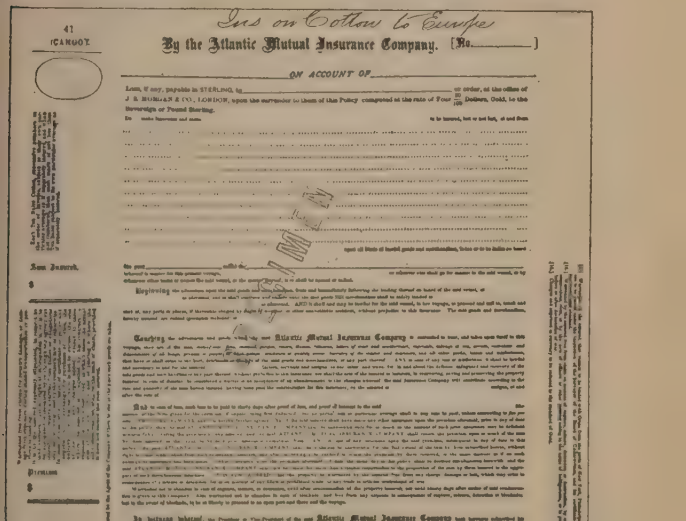
Policies which specify the actual value or agreed value of the commodities insured are known as "valued" policies, and those which omit to do so, as "open" policies. Moreover, policies which specify the name of the vessel in which the commodities are transported are "named" policies, while those which do not specify a particular vessel are "floating" policies. Those which cover a specified voyage are "voyage" policies, in contrast with the "time" policies which provide protection for a period of time. Policies may lastly be classified as "interest" or "wager" policies, according to whether the insured has or has not a real insurable interest in the commodities insured. The latter type of policy is not enforceable by law and its fulfillment depends upon the underwriters' honor, for it is one of the fundamental principles of insurance law that a policy must represent an insurable interest.

As in the case of fire insurance it has become a common practice to issue marine insurance certificates against cargo policies, so as to avoid delay and inconvenience and afford immediate protection to consignees. These certificates, which are similar to those issued in connection with fire insurance policies,[1] may, moreover, be used when international settlements are made by means of documentary bills of exchange.

The sources of marine insurance in the United States in so far as they concern cargoes or freight which has been prepaid or is collectible are threefold: (1) foreign marine or fire and marine insurance companies, which underwrite more than a majority of the total risks; (2) American companies,

[1] *See* Form 38, p. 312.

most of which conduct a fire as well as a marine insurance business, and in contrast with their foreign competitors emphasize mainly their fire business; and (3) the Bureau of



Ins on Cotton to Europe

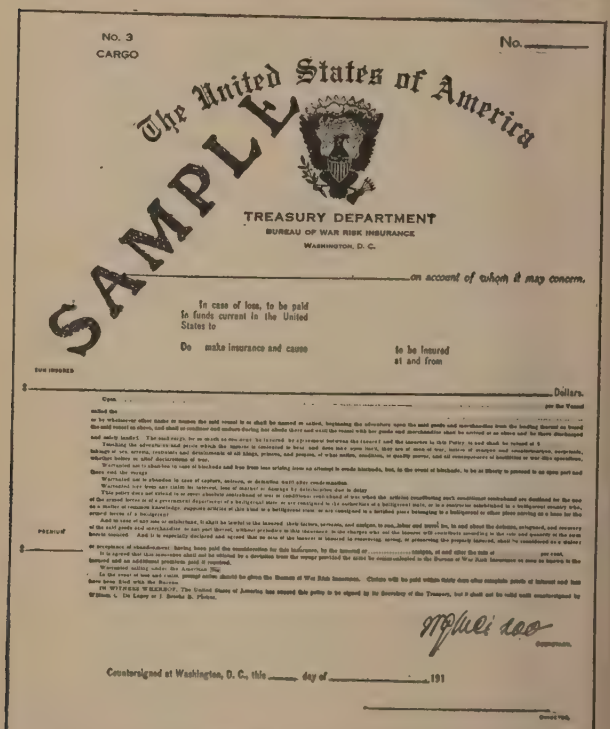
By the Atlantic Mutual Insurance Company. [No. ]

ON ACCOUNT OF

FORM 39

War Risk Insurance of the United States Treasury Department, created by an Act of September 2, 1914, to insure the war risks of vessels, cargoes and freight moving under the American flag. The cargo policy which is reproduced in Form No. 40, shows how the bureau underwrites war risks exclu-

sively, marine risks being left to private insurance concerns. In addition to these sources, large navigation companies sometimes operate self-insurance funds but such plans do not as a



No. 3
CARGO

No. _____

The United States of America

SAMPLE

TREASURY DEPARTMENT
BUREAU OF WAR RISK INSURANCE
WASHINGTON, D. C.

_____ on account of whom it may concern.

In case of loss, to be paid in funds current in the United States to

Do make insurance and cause to be insured at and from

THIS INSURES

$_____ Dollars.

Upon . . . . . per the Vessel

and she to whatsoever other name or names the said vessel is or shall be named or called, beginning the adventure upon the said goods and merchandises from the loading thereof aboard the said vessel as above, and shall so continue and endure during her abode there and until the vessel with her goods and merchandises shall be arrived at as above and for three discharged and safely landed. The said assured, for an as much as no assurer can be insured by a assurance between the insured and the insurers in this Policy is and shall be valued at $

Touching the adventures and perils which the insurers is contented to bear and does bear upon them, they are of seas of war, letters of marques and countermarques, surprisals, takings at sea, arrests, restraints and detainments of all kings, princes, and peoples, of what nation, condition, or quality soever, and all consequences or incidences or war this operations, whether before or after declarations of war.

Warranted not to abandon in case of blockade and free from loss arising from an attempt to evade blockade, but, in the event of blockade, to be at liberty to proceed to an open port and there end the voyage.

Warranted not to abandon in case of capture, seizure, or detention and any consequences thereof or any attempt thereat.

Warranted free from any claim for salvage, loss of market or damage by deterioration due to delay.

This policy does not attach to or cover absolute contraband of war or conditional contraband of war when the articles constituting such contraband contraband are destined for the use of the armed forces or of the governmental department of a belligerent state or are consigned to its authorities or a belligerent port, or to a merchant or individual for belligerent country who, to the knowledge of assured, purposes delivering such articles to a belligerent state or are consigned to a fortified port belonging to a belligerent or other place serving as a base for the armed forces of a belligerent.

And in case of any loss or misfortune, it shall be lawful to the assured their factors, servants, and assigns, to sue, labor and travel for, in, and about the defense, safeguard, and recovery of the said goods and merchandises or any part thereof, without prejudice to this insurance, to the charges whereof we the insurers will contribute according to the rate and quantity of the sum herein insured. And it is especially declared and agreed that no acts of the insurer is insured in recovering, saving, or preserving the property insured, shall be considered as a waiver or acceptance of abandonment. Having been paid the consideration for this insurance, by the insured or _____ assigns, at and after the rate of _____ per cent. Insured and an additional premium paid if required.

Warranted sailing under the American flag.

In the event of loss and claim, prompt notice should be given the Bureau at War Risk Insurance. Claims will be paid within thirty days after complete proofs of interest and loss have been filed with the Bureau.

IN WITNESS WHEREOF, The United States of America has caused this policy to be signed by the Secretary of the Treasury, but it shall not be valid until countersigned by William L. De Lapp or J. Bowie B. Phelps.

POLICY

$_____

Countersigned at Washington, D. C., this _____ day of _____, 191

Countersigned.

FORM 40

rule include the insurance of shippers' cargoes and prepaid or collectible freight. Shippers may obtain marine insurance direct from the insurance companies, through insurance agents or brokers who are located at all important ports,

and in some cases the steamship lines will take out the necessary insurance for the shippers.

Cargoes shipped in sailing vessels or in coastwise barges which take the outside or open sea route, and deck loads, are sometimes shipped without marine insurance or are protected only against fire losses. The great majority of all cargoes, however, are regularly insured so as to reduce the shipper's and consignees' risks to the minimum. In c.i.f. shipment the shipper bears the cost of the insurance, because he is in this case required to quote a net price which makes full allowance for "cost, insurance and freight." In an f.o.b. (free on board) shipment, on the contrary the insurance cost falls upon the consignee.

## Insurance the Basis of Financial Settlement

The function of insurance as the basis for financial settlement is in greatest evidence in the oversea trade because this trade is conducted over water routes and because the documentary bill of exchange is the most widely used method of international settlement. Such bills of exchange are not accepted unless they have attached to them an order bill of lading, an invoice and a marine insurance policy or certificate. Other forms of international settlement are less directly dependent upon marine insurance, yet the protection of the commodities shipped also affects the establishment of an open account or the issue of commercial and finance bills. Shippers would be far more apt to demand cash with their orders if the commodities to be shipped could not be insured against loss at sea.

Marine insurance similarly affects domestic settlements in case of shipments via inland or coastwise water routes. Domestic settlements as a whole, however, depend less upon the insurance of the commodities bought and sold because the railroads who transport much the larger share are legally obliged to act as insurers en route and therefore obviate the need of attaching an insurance certificate to a domestic docu-

mentary draft when settling for commodities shipped by rail. It is obvious, however, that the insurance of farm crops when stored or handled in warehouses, elevators, mercantile establishments, mills, factories or elsewhere until finally disposed of, frequently has a bearing upon the arrangements for financial settlement.

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Policy contracts and rate cards of livestock, tornado, windstorm, cyclone and casualty insurance companies.

# CHAPTER XVI

## THE FINANCING OF CROPS

An important part of the organization of the trade in agricultural products is the necessary financial organization. The various steps in the financing of the country's crops may, for purposes of description, be subdivided into: (1) rural credit, (2) dealers' loans on produce, (3) the place of hedging in crop financing, (4) methods of financial settlement and (5) the seasonal flow of crop-moving funds.

### Rural Credit

The farmers who produce the agricultural crops are required to take the first step in financing them. Those who own their land and have sufficient resources to make necessary improvements, provide needed equipment, and carry themselves from season to season without borrowing, can finance their crops from their own funds. There are many others, however, who are required to operate on credit. This is particularly true of tenant farmers, owners of farms only partly paid for or unimproved, and those who are financially weak, but there are also many progressive landowning farmers who borrow funds for the same reasons that men engaged in other industries operate on credit. It is estimated that the agricultural debt of the United States is no less than five billion dollars.[1]

**Long-term Mortgage Credits.**—Rural credit is of two quite distinct kinds which differ as regards length of time, purposes and sources. Long-term credits are required in or-

[1] G. K. Holmes (Chief Division of Production and Distribution, U. S. Department of Agriculture): "The Sources of Rural Credit and Extent of Rural Indebtedness."

der to purchase farm lands, make permanent improvement and occasionally to equip farms. They are based upo farm mortgages and in 1910 they aggregated about $2,793,000,000, or 55.9 per cent. of the country's total farm in debtedness.

The principal source in the case of purchase money is th individual seller from whom the farmer purchased his land while long-term credit to be used for other purposes is ob tained mainly from local banks and trust companies not unde the National Bank Act, neighboring farmers, individua lenders in nearby cities, and loan agencies representing insur ance companies. There are also certain large outside land mortgage banks which make a business of issuing land de bentures secured by farm mortgages. Eight states—Idaho Indiana, Iowa, North Dakota, Oklahoma, Oregon, South Da kota and Utah—make loans on farm mortgages, the loans be ing limited, however, except in the case of Utah, to such sum as are part of an irreducible school fund.[1] In 1914, more over, the state of New York provided for the creation of a "land bank" to be associated with local mortgage credit asso ciations, and legislation providing for the organization of loca credit unions has also been enacted in Massachusetts and Texas. Limited loans on farm mortgages have likewise been made by the Jewish Farmers' Coöperative Credit Union, and some rural loans have been made by the building and loan associations which have become so important in the purchase of city real estate.

**Short-term Rural Commercial Credits.**—Distinct from these long-term mortgage loans are the short-term loans which are designed to carry the farmer from one crop season to another, to enable him to hold his crops for favorable prices, and in some cases to purchase equipment. They are variously based upon crop liens, chattel mortgages, single or indorsed notes, unsecured book accounts, and miscellaneous farm property, warehouse receipts or securities.

[1] Wisconsin State Board of Public Affairs (William M. Duffus): "Report on Agricultural Settlement and Farm Ownership," Part I on State Loans to Farmers (1912).

It was estimated that in 1910 farm loans aggregating $2,207,000,000 were either unsecured or based upon collateral other than real-estate mortgages. Loans amounting to about $390,000,000 were based upon cotton crop liens, the cotton growers—particularly in the eastern cotton belt—pledging their growing crop with local merchants, banks or landlords and central cotton factors for advances of funds or supplies.[1] Crop liens to the extent of $450,000,000 were similarly utilized by growers of leaf tobacco, grain, fruit and other farm produce. Loans aggregating $700,000,000 were based upon chattel mortgages, that is, liens on livestock, farm machinery or other personal property of farmers pledged chiefly to local banks, local money lenders, and in the case of some "cattle loans" to central commissionmen. Open book accounts with local merchants provided short-term loans of supplies, machinery, etc., aggregating $250,000,000; and other miscellaneous farm loans amounting to $417,000,000 were also obtained.

**Shortcomings of Farm Credits.**—It is evident from the above statement that farm credit is by no means an insignificant phase of crop financing in the United States. Yet there are many farmers who have experienced difficulties in obtaining the amount or kind of credit or the favorable terms desired, thereby hampering to some extent the purchase, improvement and equipment of farm lands and obliging many farmers to dispose of their crops at times when in their judgment the market prices are unfavorable.

The specific obstacles most frequently complained of are various: (1) A fundamental difficulty has been the inadequacy of the sources of farm credits. About six-sevenths of the country's farm loans are derived from strictly local and nearby sources such as local banks, general stores, neighboring farmers and local money lenders. Only about one-seventh of the credit is supplied from outside sources. The resources of the great banking and financial centers of the United States have entered the field of rural credit in but a limited degree.

[1] *See* chap. v, p. 105.

The national banks were until the enactment of the Federal Reserve Act of 1913 prohibited from loaning on real estate or accepting as commercial paper the farmer's promissory notes running over ninety days. The first of these provisions debarred such banks almost entirely from long-term farm loans, and the second seriously limited their usefulness as sources of short-term credit because a loan for ninety days is usually of insufficient length for agricultural purposes. Commercial banks, moreover, aside from any legal requirements, have preferred industries the wares of which move more constantly and can be turned over daily or on short notice.

The Act of 1913 remedies the legal situation in part by permitting national banks not situated in central reserve cities to make loans based on improved and unencumbered farms situated within their respective districts, for periods not exceeding five years and amounts not exceeding 50 per cent. of the farm's value, the total not to exceed 25 per cent. of the bank's capital and surplus or one-third of its time deposits. It also permits reserve banks to rediscount notes, drafts and bills of exchange issued for farm purposes or based on livestock, provided that the maturity does not exceed six months or the total does not exceed in amount such percentage of its capital as is to be fixed by the Federal Reserve Board.

(2) There has been some difficulty in obtaining farm credits of satisfactory term length. The returns of insurance companies, for example, show that in case of long-term loans the usual length of farm mortgages is five years, although some of them run for periods of seven to ten years. What many farmers desire for purposes of purchase and permanent improvement is a loan running for a period of from 20 to 35 years so as to extend practically from one farm generation to another. Such credits are provided by some of the land mortgage companies which issue mortgage debentures, but such concerns have since the nineties been limited in number. Those farmers, moreover, who desire short-time loans, often require a term exceeding 90 days and therefore find a

poor market for their notes as compared with the commercial paper issued in industries not so dependent upon seasonal crops.

(3) In many parts of the United States the trend of discussion concerning farm credits is directed principally toward the reduction of interest rates and other incidental costs. The average rate of interest on farm loans in the United States is about 7.75 per cent., ranging from an average of 5.8 per cent. in New Hampshire to 11.58 per cent. in Oklahoma. Nominally they do not exceed the interest rates paid in cities, except in a minority of instances, but there are frequently incidental costs which result in the payment of exorbitant real interest charges. To circumvent the maximum interest rates established by law the sums stated in farmers' notes sometimes are made to exceed the amount actually loaned, or two notes each requiring the payment of interest may be drawn, one in favor of an outside loaning institution and the other in favor of the local agency, the notes being based respectively on a first and second mortgage. At times there are also commissions, abstract costs and renewal fees. In the case of open-book credits or loans of supplies or implements secured by crop liens, exorbitant usury is sometimes concealed in the prices which are charged for the wares so advanced.

(4) In case of crop liens an additional source of complaint, particularly in the cotton states, frequently arises from the growers' loss of control over the sale of his crops, as regards both method and time of sale.

There has in recent years been much agitation in favor of various kinds of rural credit reforms, such as government or state loans, land debenture banks and coöperative credit banks, unions or associations. Detailed studies have been made of the coöperative credit plans of Germany, France, Italy, Austro-Hungary, Russia, Switzerland and other foreign countries.[1]

[1] See Lorenzoni: Outline of European Credit Systems; Herrick and Ingalls: Rural Credits; International Institute of Agriculture: Outline of European Coöperative Credit Systems.

## Dealers' Loans on Produce

Having financed the farmers' crops before they are har vested and before they have left his premises, a second phas of crop financing arises after they have been shipped to mar ket. Again those farmers who have adequate resources o their own may, if they do not wish to sell at once, ship thei crops to the markets, store them in warehouses or elevator and ultimately dispose of them without outside assistance There are others, however, who cannot hold them withou receiving loans or advances. Such farmers may store thei grain, cotton, tobacco or other farm products in recognized warehouses, elevators, or other storage places and obtain credit either from the banks direct or through the warehouse men or commissionmen based upon warehouse receipts o other evidence of crop ownership. At times there is complain that farmers are not able to contract such loans as readily as produce dealers and some of the cotton unions of the South have endeavored to remedy the situation by providing coöperative warehouses and establishing definite banking con nections, but the Department of Agriculture reported in 191 that on the whole but one-fourth of the farmers holding ware house receipts use them for the purpose of obtaining credit Much the larger portion of such loans or advances are nego tiated by dealers and other crop purchasers, rather than by the growers, who in the majority of instances sell their crops to local buyers or ship them to central markets for immediate sale. Most of the farmers who wish to hold their crops for higher prices store them on their own premises; it is the exceptional farmer who stores them in central warehouses and uses them as collateral for loans. Dealers or other buyers on the contrary, in order to provide the immense amounts of cash required to buy the crops as they are offered by the growers, and who store large quantities, frequently pledge the stored products as collateral for loans.

**Loans on Grain.**—Local dealers obtain such credit at times, but since they usually dispose of most of their holdings

hortly after acquiring them, it devolves mainly upon the lealers at the central markets to contract loans of this kind. Vast quantities of grain are stored in the central elevators at he primary and seaboard markets by elevatormen and central rain dealers to be held until they are finally sold to domestic nills or exporters. Meanwhile much of this grain is pledged o banks as the basis for loans, the elevator or warehouse re-eipts being accepted as evidence of ownership. This so-alled "grain paper," being based upon receipts which are arefully regulated by law in the western grain states, the ntire trade conduct of the public elevators in fact being sub-ect to state and exchange control,[1] is readily accepted in all rdinary times by many western banks. Indeed some western rain paper is also placed in the eastern banks of the United States and in Canadian banks through commercial paper rokers.

**Cotton Loans.**—The practice of cotton buyers is similar o that of the central grain dealers, although the issue of otton warehouse receipts is on the whole less subject to pub-ic or exchange regulation. The bases of cotton loans differ t the various points in its passage from grower to spinner. When bought at the gin, "gin tickets" issued by the ginning oncerns may be pledged at banks for loans of funds; when eld at a cotton compress, the "compress receipts" may be imilarly used; and when stored in warehouses either at the arious interior points of concentration, or at the cotton ports, he warehouse receipts become the basis for loans. When noving from gin to compress or compress to central market efore final sale and shipment to spinner or importer, the ailroad bill of lading may be substituted for the storage re-eipts as evidence of ownership and be used as collateral for ank loans or advances from cotton factors.

**Leaf Tobacco and Wool Loans.**—Similarly leaf tobacco, ool or other produce suitable for storage, is frequently ledged as collateral for loans or advances either directly with anks or indirectly with warehousemen or central commission-nen. The proprietors of the auction leaf tobacco warehouses

[1] *See* chap. iv, p. 65.

of the South frequently make advances on stored leaf, they in turn obtaining loans from local banks, and during the "leaf tobacco war" of 1904-1905 the growers of some districts acting in union obtained loans from outside (New York) banks which accepted a lien on the tobacco. Wool stored at the large eastern and middle-western central wool markets is also pledged for bank loans by the central wool dealers, and in case of consigned wool is sometimes offered by local dealers or growers to obtain advances from commission houses.

**Cold Storage Warehouse Loans.**—Farm produce of all kinds suitable for storage and held in cold storage warehouses is at many central produce markets regularly pledged by central produce dealers, and occasionally by local shippers and growers, to obtain credit. The loans are sometimes obtained from the cold storage warehousemen who are in a better position to judge produce values and come into closer business contact with their clients than the banks. Their loaning function, moreover, is regarded as a convenience by both client and banker, and tends toward careful warehouse management. The bankers to whom they in turn go for credit generally fall into three groups: those who readily loan on produce upon presentation of storage receipts, those who loan only after examination of the stored produce, and those who refuse to accept cold storage produce as the basis for credit or do so only sparingly.

## The Place of Hedging in Crop Financing

The practice of hedging spot grain and cotton transactions on the speculative exchanges is a further step in the financing of the speculative crops.[1] By enabling grain and cotton buyers to distribute the risk of price changes among produce speculators and insuring themselves against loss of trade profits, they are able to operate on narrower price margins, pay the farmers relatively higher prices, enter into contracts calling for the delivery in the future of grain and cot-

[1] For description of hedging see chap. vii, p. 156.

on not possessed at the time, purchase almost unlimited quanities for storage, and strengthen their financial standing and redit.

The extent to which dealers can pledge grain or cotton n order to obtain loans from banks is greatly enhanced by he practice of hedging which reduces the danger of losses n the part of grain and cotton buyers, and by the existence f organized exchanges where large quantities of produce so ledged can if necessary be sold in the shortest possible time. Hedging similarly affects credit accommodations not based pon produce liens, for it generally reduces the risks of the rain and cotton trades.

## Methods of Financial Settlement

**Domestic Settlements.**—Sales of farm products in the spot roduce markets of the United States are settled in various ays: (1) Sales of grain, cotton or other products sold beore shipment may be settled by using a railroad order bill f lading. Such bills of lading are made out to the order of he shipper and require the consignee to present the properly ndorsed original copy to the railroad before the latter may eliver the goods to him. The original or yellow copy may herefore be taken to the shipper's local bank and when acompanied by an invoice, and in case of water transportation, y a marine insurance certificate, may be used as the basis or a draft drawn on the consignee or on another bank in hich he has established a credit. The draft may call for ayment at sight, or for periods of say 30, 60 or 90 days, and t may be drawn so as to require actual payment before deivery of the indorsed bill of lading or "for acceptance." n the latter case the consignee is obliged to appear at the ank at destination and formally accept the draft in order o obtain the bill of lading but need not settle for the products ntil the draft matures. By using the order bill of lading he shipper may, however, obtain immediate payment for his hipment through regular banking channels.

(2) In case of farm products consigned to a commissio man, broker or factor as is commonly done in the livesto and fruit trades and not infrequently in the grain, cotto leaf tobacco, wool and other agricultural trades, the comm sion concerns usually settle with the purchaser, and after d ducting their commission or brokerage fee, transportati costs and any other shipping or trade costs chargeable to t products sold, send the shipper an itemized statement and check or draft covering the balance due.

(3) Shippers of farm staples may also run open-book a counts for buyers, particularly with concerns making freque purchases, settlement being made periodically or upon pre entation of bill.

(4) The buyer of farm products may settle with the shi per through the use of so-called commercial credit bills, whi are drafts drawn by him on a bank as a commercial credi Such drafts have no documents attached to them, but a merely drawn on the bank which has agreed to accept the for payment with the understanding that the customer wi put the bank in funds before the draft falls due. The ban may extend such credit without collateral, or it may requi security in the form of bills receivable, claims against cu tomers, merchandise or similar collateral.

(5) Settlement may also be made through "finance bills which are drawn against stock or bond collateral deposite with a bank. Finance bills are more commonly used by bank than by merchants and are therefore often known as banker bills, but sometimes they are also used for purposes of com mercial settlement.

(6) Cash produce transactions may also be settled by r quiring cash payment on delivery or cash with order. Offer of a discount may be made to induce cash payments, an sometimes it is requested that shipments shall be partly pai for by cash with order, the remainder, to be paid in accord ance with some one of the preceding methods of settlemen

**Settlement of Agricultural Exports and Imports.**—All th methods of settlement enumerated above are utilized als in the agricultural export and import trades, but in thes

trades the settlements based upon the export or import bills of lading are of paramount importance. The common practice is to draw a draft, known in the foreign trade as a bill of exchange, either upon a designated bank or upon the consignee, the bill having attached to it the original ocean or rail-ocean bill of lading, an invoice showing the nature of the products, and a marine insurance certificate. Such drafts are known as documentary bills of exchange. When drawn upon a bank it means that the purchaser has established a "confirmed bankers' credit" at some recognized bank in London, Paris, New York or other European or American banking center, which upon receipt of the bill with proper documents attached will either pay it on sight or accept it for payment upon maturity. Documentary bills of exchange drawn direct upon the consignee are less commonly used in the foreign trade, but they too may be drawn either for payment or for acceptance, the former bill requiring payment before delivery of the bill of lading and the latter permitting such delivery upon formal acceptance by the consignee who thereby obligates himself to settle the bill when it falls due at the end of say three or four months. Documentary bills of exchange are particularly adapted to the foreign trade for they reduce the element of risk to both shipper and consignee and enable the shipper to obtain his money as soon as the goods are forwarded. They are particularly useful as a safe method of extending credit to foreign buyers.

It is customary to execute the bills of exchange and all attached documents in duplicate and to forward them in separate mails so as to minimize the risk of loss in transit. It is also important that the attached bills of lading should represent actual commodities to the amount specified in the bill and invoice. The use of fraudulent and worthless cotton bills of lading severely disrupted the financing of cotton exports in 1911.

A variation of the documentary bill drawn on a confirmed banker's credit is the so-called "Oriental letter of credit" which is sometimes used in the trade with far-eastern countries. In this case the foreign merchant at the time he

orders the American products supplies a letter or statemer which is merely an advice to the New York bankers acting a correspondents of the far-eastern bankers that it will probabl be safe to purchase drafts drawn on the Oriental firm in que tion up to certain amounts. No actual confirmed credit ha however, been established in this case and the drawer is n relieved from responsibility, for the advice is not an actu letter of credit.[1]

Commercial credit bills are sometimes used by large e porting and importing firms. Foreign finance bills are al used, particularly the so-called "house bills" which are draw by American firms on their own branches in Europe, but a now less freely drawn than in the past.[2] Open accounts a run far less commonly than in the domestic trade. Cash pa ment with order is seldom required for it is customary t grant credit in the foreign trade; and settlement throug foreign commissionmen is unimportant because agricultur products are seldom shipped abroad on consignment.

## The Seasonal Flow of Crop-moving Funds

Until recently one of the pronounced phases of crop fina cing was the seasonal flow of bank funds—westward durin the crop-moving months and eastward after the bulk of th crops had been sold. Vast quantities of cash are needed i the western grain states during the summer and fall month when cash is required to pay for the millions of bushels grain which are then marketed by such farmers as do n hold their crops for sale in later months. Until the lat 'nineties much of the money sent to the West for crop-movin purposes consisted of eastern bank deposits, the western ban being unable to provide sufficient cash from their own r sources. Later the western banking situation was great improved, and it was no longer necessary to the same exte

[1] B. O. Hough: Ocean Traffic and Trade, p. 398.

[2] P. M. Warburg: "The Discount System in Europe," Nationa Monetary Commission Report, p. 13.

to call upon the eastern banks for assistance. The seasonal flow of funds continued, however, for many western banks regularly sent a portion of their reserves eastward during the dull season, but called upon the eastern banks for its return during the crop-moving season.

It is at this point that the grain and securities markets are interrelated, because many of the funds flowing eastward during the dull season are loaned to brokers and dealers in securities for the purchase of stocks and bonds. Many other factors affect the security market, but in so far as it depends upon the condition of the money market, the eastward flow of funds tends to stimulate security dealings and the westward flow to depress them. The interrelation was especially manifest during the financial panic of 1907 when a money stringency prevailed and many eastern banks refused to return to the western banks the surplus funds which they needed to finance the crops. Had the call of the western banks been heeded the prices of securities would have suffered even more than they did. As it was the price of grain was abnormally depressed because of lack of sufficient crop-moving funds, and for a time the grain trade was demoralized.

In recent years the seasonal flow of bank funds has been less noticeable, alike because the western banks have been less willing to repeat their experience of 1907 and because it is now less necessary for them to seek outside sources of profit after the crops have been marketed, and less necessary to seek the assistance of eastern banks. The Federal Reserve Act of 1913 will affect the seasonal flow of bank funds somewhat, for it provides that after thirty-six months from date of the establishment of a federal reserve bank in any district no portion of the legally required reserves of any bank organized under the Act may be held anywhere except in the bank's own vaults or in those of the federal reserve bank of the district in which it is situated.

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# CHAPTER XVII

## PRICES OF AGRICULTURAL COMMODITIES

No phase of the trade in farm products has in recent years caused more discussion than the rise in prices which products have undergone since the year 1896. In discussing the extent of this rise and its causes, and the factors which determine the prices of farm commodities it is advisable to bear in mind that the trade organization through which such commodities pass in their flow from farmer to consumer varies widely and that their prices change as they pass from the local to the primary or central markets of the interior and again as they pass to the final purchaser, who may be located in the interior, at the seaboard ports or other distant domestic markets, or in foreign countries. There is no uniform trade machinery, but as in the sale of other commodities it is possible to distinguish at least three primary groups of prices for many of the great farm staples: wholesale or central market prices, growers' local prices and retail prices.

### Wholesale Prices

Although the crops in many instances pass through the local markets before reaching the great central wholesale markets it is desirable to discuss wholesale prices first, as they constitute the basis alike of farm and retail prices. The wholesale prices are the standard in accordance with which all other agricultural commodity prices are gauged. It is at the wholesale markets that price fluctuations are primarily determined.

The wholesale markets for American farm products in most instances are threefold: the central or primary markets

of the interior, the seaboard markets, and the foreign wholesale markets. Their relative importance as price establishers varies, a limited group usually having a dominant position. In establishing the wholesale price for American grain, for example, the primary grain markets of the interior particularly Chicago, are dominant; in the cotton trade, Liverpool, New Orleans and New York; in the domestic wool trade Boston, New York, and Philadelphia; in the livestock trade the primary livestock centers of the Central West; while in the leaf tobacco, fruit and produce trades the importance of the various wholesale markets is more evenly balanced. The absolute prices of a given farm commodity differ at the various wholesale markets, but, except temporarily, such differences merely reflect varying transportation, selling and other distribution costs, and in some cases import duties. Wholesale agricultural prices, especially in those trades where exchanges have been organized, are national, their entire level fluctuating in relatively close harmony. The wholesale prices for grain and cotton, moreover, are practically world-wide because of the extent of international trade in those staples, the well-organized condition of the world's trade in them, and the larger amount of organized speculation. To a limited extent there is also a world wholesale price for wool, leaf tobacco and livestock.

**Price Index Numbers of Agricultural Products.**—The standardized method of indicating the fluctuations of general price levels is in terms of index numbers based upon actual prices but expressed in percentages, and such index numbers have been computed for the wholesale prices of farm products from 1860 to the present time. Those for the year 1860 to 1890 were compiled by the so-called Aldrich Committee[1] of the United States Senate, and those for later years by the United States Bureau of Labor Statistics, which, as shown in Table XIV, has readjusted all of them with the average for the period 1890 to 1899 as 100.

The table shows that the wholesale prices of farm prod-

[1] Senate Report No. 1394 (part 2), 2d session, 52d Cong., Finance Committee, 1893.

ucts declined during the years 1892 to 1896, then advanced steadily until 1900, and thereafter fluctuated irregularly but gradually rose to an unusually high level. In 1913 they were 50.7 per cent. higher than in 1890, 51.2 per cent. higher than in 1900, and 65.8 per cent. above the average prices of the decade 1890 to 1899. Not all the farm commodities included in these index numbers underwent the same increase in prices, but the advance in all the great staples was substantial. As compared with the average for the period 1890 to 1899 the wholesale prices of hogs (heavy) in 1913 showed an increase of 89.6 per cent., of beef steers (choice to prime) 67.8 per cent., upland cotton (middling) 64.8 per cent., corn 64.3 per cent., barley 53.1 per cent., oats 39.8 per cent., wheat 26.9 per cent., and sheep (western) 20.8 per cent.

Table XIV, moreover, shows that the wholesale prices of farm products have since 1896 increased to a far greater extent than the general level of all wholesale commodity prices combined and more rapidly than those of any of the other groups into which the bureau classifies commodity prices. As compared with the increase of 65.8 per cent. in the relative prices of farm products in 1913 over the average for the decade 1890 to 1899, the general commodity price level increased 35.2 per cent., food prices 37.1 per cent., the prices of cloths and clothing 23.7 per cent., of fuel and lighting 42.2 per cent., metals and implements 27.5 per cent., lumber and building materials 51.8 per cent., drugs and chemicals 24.1 per cent., housefurnishings 18.1 per cent., and miscellaneous commodities 37.1 per cent.

**Index Numbers of General Wholesale Price Levels.**—Since the unusual or special increase in farm commodity prices as compared with the increase in the general level of prices is especially significant because of its bearing upon the causes of price changes, it is well to establish this general price level as definitely as possible. The principal wholesale commodity price index numbers, in addition to those published by the Bureau of Labor Statistics for the United States, are those compiled by *Bradstreet's* and by Mr. Thomas Gib-

## TABLE XIV

### Relative Prices of Commodities 1860–1913*

| Year | Farm Products | Food, etc. | Cloths and Clothing | Fuel and Lighting | Metals and Implements | Lumber and Building Materials | Drugs and Chemicals | House-furnishing Goods | Miscellaneous | All Commodities |
|---|---|---|---|---|---|---|---|---|---|---|
| 1860..... | 11 117.1 | 22 124.1 | 13 140.9 | 7 129.6 | 16 160.2 | 20 98.1 | 8 252.8 | 10 202.3 | 5 124.9 | 127 141.0 |
| 1865..... | 11 239.8 | 21 238.5 | 22 377.8 | 8 296.5 | 17 314.9 | 22 222.5 | 8 435.0 | 11 338.2 | 5 259.3 | 135 292.3 |
| 1870..... | 11 167.8 | 24 196.2 | 34 200.9 | 8 204.3 | 20 205.3 | 22 154.3 | 8 297.7 | 12 214.1 | 5 197.2 | 156 197.6 |
| 1875 ..... | 13 170.9 | 30 159.4 | 46 162.9 | 8 183.1 | 18 191.7 | 23 141 5 | 8 258.6 | 13 175.9 | 6 150.4 | 170 168.9 |
| 1880..... | 11 133.8 | 26 130.0 | 43 144.2 | 6 142.4 | 29 172.6 | 24 124.6 | 8 275.6 | 13 140.4 | 6 135.4 | 190 147.5 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1885 | 11 | 120.6 | 38 | 111.9 | 84 | 115.1 | 8 | 102.5 | 29 | 116.8 | 28 | 114.4 | 8 | 140.6 | 14 | 119.1 | 6 | 114.5 | 109 | 115.8 |
| 1890 | 16 | 110.0 | 43 | 112.4 | 76 | 113.5 | 13 | 104.7 | 37 | 119.2 | 26 | 111.0 | 9 | 110.2 | 14 | 111.1 | 13 | 110.3 | 241 | 112.9 |
| 1891 | 16 | 121.5 | 43 | 115.7 | 76 | 111.3 | 13 | 102.7 | 37 | 111.7 | 26 | 108.4 | 9 | 103.6 | 14 | 110.2 | 13 | 109 4 | 241 | 111.7 |
| 1892 | 16 | 111.7 | 43 | 103.6 | 73 | 109.0 | 13 | 101.1 | 37 | 106.0 | 26 | 102.8 | 9 | 102.9 | 14 | 106.5 | 13 | 106.2 | 243 | 106.1 |
| 1893 | 16 | 107.9 | 44 | 110.2 | 73 | 107.2 | 13 | 100.0 | 37 | 100.7 | 26 | 101.9 | 9 | 100 5 | 14 | 104.9 | 13 | 105.9 | 244 | 105.6 |
| 1894 | 16 | 95.9 | 44 | 99.8 | 72 | 96.1 | 13 | 92.4 | 38 | 90.7 | 26 | 96.3 | 9 | 89.8 | 14 | 100.1 | 13 | 99.8 | 256 | 96.1 |
| 1895 | 16 | 93.3 | 44 | 94.6 | 74 | 92.7 | 13 | 98.1 | 38 | 92.0 | 27 | 94.1 | 9 | 87.9 | 14 | 96.5 | 13 | 94.5 | 249 | 93.6 |
| 1896 | 16 | 78.3 | 44 | 83.8 | 75 | 91.3 | 13 | 104.3 | 39 | 93.7 | 27 | 93.4 | 9 | 92.6 | 14 | 94.0 | 13 | 91.4 | 260 | 90.4 |
| 1897 | 16 | 85.2 | 44 | 87.7 | 75 | 91.1 | 13 | 96.4 | 39 | 86.6 | 27 | 90.4 | 9 | 94.4 | 14 | 89.8 | 13 | 92.1 | 261 | 89.7 |
| 1898 | 16 | 96.1 | 44 | 94.4 | 76 | 93.4 | 13 | 95.4 | 39 | 86 4 | 27 | 95.8 | 9 | 106.6 | 14 | 92.0 | 13 | 92.4 | 261 | 93.4 |
| 1899 | 16 | 100.0 | 44 | 98.3 | 76 | 96.7 | 13 | 105.0 | 38 | 114.7 | 27 | 105.8 | 9 | 111.3 | 14 | 95.1 | 13 | 97.7 | 260 | 101.7 |
| 1900 | 16 | 109.5 | 44 | 104.2 | 76 | 106.8 | 13 | 120.9 | 38 | 120 5 | 27 | 115.7 | 9 | 115.7 | 14 | 106.1 | 13 | 109.8 | 260 | 110.5 |
| 1901 | 16 | 116.9 | 44 | 105.9 | 76 | 101.0 | 13 | 119.5 | 38 | 111.9 | 27 | 116 7 | 9 | 115 2 | 14 | 110.9 | 13 | 107 4 | 260 | 108.5 |
| 1902 | 16 | 130.5 | 44 | 111.3 | 76 | 102 0 | 13 | 134.3 | 38 | 117.2 | 27 | 118.8 | 9 | 114.2 | 14 | 112.2 | 13 | 114.1 | 260 | 112.9 |
| 1903 | 16 | 118.8 | 44 | 107.1 | 76 | 106.6 | 13 | 149.3 | 38 | 117.6 | 27 | 121.4 | 9 | 112.6 | 14 | 113.0 | 13 | 113.6 | 260 | 113.6 |
| 1904 | 16 | 126.2 | 43 | 107.2 | 76 | 109.8 | 13 | 132.6 | 38 | 109.6 | 27 | 122.7 | 9 | 110.0 | 14 | 111.7 | 13 | 111.7 | 260 | 113.0 |
| 1905 | 16 | 124.2 | 43 | 108.7 | 76 | 112.0 | 13 | 128.8 | 38 | 122.5 | 27 | 127.7 | 9 | 109.1 | 14 | 109.1 | 13 | 112.8 | 260 | 115.9 |
| 1906 | 16 | 123.6 | 43 | 112.6 | 76 | 120 0 | 13 | 131 9 | 38 | 135.2 | 27 | 140.1 | 9 | 101.2 | 14 | 111.0 | 13 | 121.1 | 258 | 122.5 |
| 1907 | 16 | 137.1 | 43 | 117.8 | 76 | 126.7 | 13 | 135.0 | 38 | 143.4 | 27 | 146.9 | 9 | 109.6 | 14 | 118.5 | 13 | 127.1 | 258 | 129.5 |
| 1908 | 20 | 133.1 | 47 | 120.6 | 66 | 116.9 | 13 | 130.8 | 36 | 125 4 | 26 | 133.1 | 9 | 110.4 | 14 | 114.0 | 13 | 119.9 | 258 | 122.8 |
| 1909 | 20 | 153.1 | 47 | 124.7 | 64 | 119.6 | 13 | 129.3 | 33 | 124.8 | 26 | 138.4 | 9 | 112.4 | 14 | 111.7 | 13 | 125.9 | 247 | 126.5 |
| 1910 | 20 | 164.6 | 47 | 128.7 | 64 | 123.7 | 13 | 125.4 | 35 | 128.5 | 26 | 153.2 | 9 | 117.0 | 14 | 111.6 | 13 | 133.1 | 257 | 131.6 |
| 1911 | 20 | 162.0 | 47 | 131.3 | 65 | 119.6 | 13 | 122.4 | 35 | 119.4 | 26 | 151.4 | 9 | 120 3 | 14 | 111.1 | 13 | 131.2 | 257 | 129.2 |
| 1912 | 20 | 171.3 | 55 | 139.5 | 65 | 120.7 | 13 | 133.9 | 35 | 126.1 | 26 | 148.2 | 9 | 122.9 | 14 | 113.7 | 13 | 133.2 | 258 | 133.6 |
| 1913 | 20 | 165.8 | 54 | 137.1 | 64 | 123.7 | 13 | 142.2 | 35 | 127.5 | 26 | 151.8 | 9 | 124.1 | 14 | 118.1 | 13 | 137.1 | 258 | 135.2 |

* U. S. Bureau of Labor Statistics: Wholesale Prices 1890–1913, Whole Number 149, p. 179. The small figures in each column represent the number of commodities upon which the relative price for each specified group is based.

son;[1] for British wholesale markets by the *London Economist*, and Mr. Augustus Sauerbeck; and for Canada by the Canadian Department of Agriculture. As is shown in Table XV these index numbers register respective advances between the years 1900 to 1913 of 22.4 per cent., 17 per cent., 31.4 per cent., 27.2 per cent., 13.3 per cent., and 25.2 per cent.[2] This variation even as between the index numbers representing wholesale prices in the United States is due in part to the varying number of commodities and the wholesale markets

TABLE XV

INDEX NUMBERS OF GENERAL WHOLESALE COMMODITY PRICES

| Year | U. S. Bureau of Labor Statistics | Bradstreet's | Gibson's | London Economist | Sauerbeck's | Canadian Labor Department |
|---|---|---|---|---|---|---|
| 1900..... | 110.5 | 7.88 | 44.2 | 2125 | 75 | 108.2 |
| 1901..... | 108.5 | 7.57 | 44.5 | 1948 | 70 | 107.0 |
| 1902..... | 112.9 | 7.88 | 53.5 | 2003 | 69 | 109.0 |
| 1903..... | 113.6 | 7.94 | 49.0 | 2197 | 69 | 110.5 |
| 1904..... | 113.0 | 7.92 | 48.3 | 2136 | 70 | 111.4 |
| 1905..... | 115.9 | 8.09 | 47.3 | 2342 | 72 | 113.8 |
| 1906..... | 122.5 | 8.41 | 49.8 | 2361 | 77 | 120.0 |
| 1907..... | 129.5 | 8.90 | 50.9 | 2508 | 80 | 126.2 |
| 1908..... | 122.8 | 8.00 | 54.2 | 2223 | 73 | 120.8 |
| 1909..... | 126.5 | 8.51 | 59.2 | 2231 | 74 | 121.2 |
| 1910..... | 131 6 | 8.98 | 59.3 | 2497 | 78 | 124.2 |
| 1911..... | 129.2 | 8.7129 | 56.9 | 2542 | 80 | 127.4 |
| 1912..... | 133.6 | 9.1867 | 62.6 | 2609 | 85 | 134.4 |
| 1913..... | 135.2 | 9.2115 | 58.1 | 2704 | 85 | 135.5 |
| Increase, 1900-1913 | Per Cent. 22.4 | Per Cent. 17 | Per Cent. 31.4 | Per Cent. 27.2 | Per Cent. 13.3 | Per Cent 25.2 |

[1] Continuation of those compiled by *Dun's* until 1907.

[2] The *Times Annalist* publishes index numbers of wholesale food prices showing an increase during this period of 40.4 per cent. The Canadian index numbers are given because agricultural conditions in Canada resemble those in the United States in many respects; and the British index numbers are of value because the United Kingdom is the largest foreign market for American farm products, and because they are not restricted by protective import duties.

included in their computation. All of them indicate, however, that the general level of wholesale prices has advanced less rapidly than the wholesale prices of farm products.

## Wholesale Price Factors

Though various distinct schools of thought have endeavored to attribute the general rise in prices, including agricultural as well as all other products, to some one cause, the preponderance of evidence tends to show that the rise in the wholesale price of farm commodities was due to a combination of causes.

**1. The Gold Production Theory.**—A portion of the rise has doubtless been due to the increase in the production of gold and in the use of credit. According to this conception in its most approved form prices are the resultant of the following formula.[1] $P = \frac{M V + M^1 V^1}{T}$. In this formula M equals the amount of money in circulation in the United States; $M^1$ the individual bank deposits subject to check; V and $V^1$ their respective velocities of circulation; and T the total volume of trade expressed in dollars. Each of these price factors were, after laborious research, estimated by Professor Irving Fisher,[2] and with the year 1909 as the basis the theoretical general prices for each of the years 1896 to 1909 was computed. The parallel columns of Table XVI show how these calculated prices expressed in index numbers compared with the index numbers of actual prices, including the prices of securities and labor as well as of commodities.

All of the factors in the accepted formula changed during the period 1896 to 1909 but those which changed to the greatest extent exerted the widest influence upon prices. The

[1] Expounded and applied practically by Professors E. W. Kemmerer and Irving Fisher.

[2] *See* Irving Fisher: The Purchasing Power of Money (Revised 1913), pp. 276-318.

amount of money in circulation in the United States was estimated to have increased from .87 to 1.63 billion dollars, individual deposits subject to check from 2.68 to 6.75 billions, the velocity of money circulation from 19 to 22; and the velocity of check circulation from 36 to 54. The estimated volume of trade, (T), also increased from 209 to 399 billion dollars, but being the divisor the effect of this increase was to reduce prices. Of those factors which tend toward higher

TABLE XVI

CALCULATED INDEX NUMBERS

| Year | Directly (P) | Indirectly $\frac{MV + M^1V^1}{T}$ |
|---|---|---|
| 1896 | 63 | 54 |
| 1897 | 64 | 52 |
| 1898 | 66 | 56 |
| 1899 | 74 | 69 |
| 1900 | 80 | 68 |
| 1901 | 84 | 76 |
| 1902 | 89 | 82 |
| 1903 | 87 | 75 |
| 1904 | 85 | 81 |
| 1905 | 91 | 83 |
| 1906 | 97 | 90 |
| 1907 | 97 | 86 |
| 1908 | 92 | 87 |
| 1909 | 100 | 100 |

prices the greatest gains were in the amount of money in circulation and in the velocity of check transactions. As stated by Professor Fisher:

> The four price-raising causes may be arranged in the following order of relative importance:
>
> Except for the growth of V, prices would have been 1 per cent. lower than they were.
>
> Except for the growth of $\frac{M^1}{M}$, prices would have been 23 per cent. lower than they were.

Except for the growth of V', prices would have been 28 per cent. lower than they were.

Except for the growth of M, prices would have been 45 per cent. lower than they were.

We conclude, therefore, that the growth of the velocity of circulation of money was a negligible factor in raising prices; that the relative growth of deposits and their velocity were large factors; and that the growth of money was the largest. The importance of the growth of money as a price-raising factor was, according to the above figures, almost exactly double that of relative deposits and a little over 50 per cent. greater than that of their velocity of circulation.

Since the growth of M was largely dependent upon the increased production of gold it is readily seen how this explanation of the increase in prices came to be known as the "gold theory of prices." Its staunchest advocates, however, do not claim that the increased gold output was solely responsible for the rising price level, for their calculations indicate that a portion of the rise was due to the increased velocity of check transactions. It is estimated that over 90 per cent. of the business of the United States is performed by checks and less than 10 per cent. by money. Increased credit transactions as well as the increased gold output was therefore among the foremost causes of the general increase in prices.

It is futile, however, to contend that the rise of the wholesale prices of farm products or of any other special group of commodities was due solely to the causes considered in the preceding paragraphs. The above formula could at most serve to explain the increase in the general level of all prices combined. Yet the price of wheat, cotton or any other farm product or of any commodity whatsoever is to some extent a special price which is only partly dependent upon the factors which establish a general level of prices. As was previously stated the prices of farm products increased to a far greater extent than the general level of all wholesale commodity prices combined, and there is wide variation between individual farm products as regards the extent to which their prices have ad-

vanced. Similar variations also occur between other commodities. While the index numbers of the Bureau of Labor Statistics show an advance of 66.5 per cent. in the price of eggs in 1913 as compared with the average for the decade 1890 to 1899, lard 68.3 per cent., bacon 88.7 per cent., dressed beef 62.4 per cent., yellow pine sidings 74 per cent., and white pine boards (uppers) 113 per cent., the wholesale price of men's boots and shoes increased but 22.6 per cent., house furnishings 18.1 per cent., and the wholesale price of some commodities such as sugar, news and wrapping paper declined. All of these fluctuations varied widely from the advance in the general level of commodity prices.

The unusual advance in the price of farm products was only partly due to increased gold production and the greater velocity of check transactions. Moreover, the exact proportion of the advance chargeable to these factors is not known because the opportunities for error in the theoretical price calculations mentioned above are obvious. That the calculations were made with exemplary care is admitted, yet some of the principal items are estimates rather than definitely known facts. It is doubtful, for example, whether any two statisticians, working independently, would arrive at substantially the same figure for "total volume of trade" in the United States (T in the price formula). The increase in the general level of commodity prices, likewise, is not definitely established, the advances shown by such general index numbers as have been compiled presenting appreciable variation (*See* Table XV).

**2. The Forces of Supply and Demand.**—An important cause of the special rise in the wholesale prices of farm commodities is the changing relation between supply and demand. Both of these price factors are in turn subject to numerous fundamental underlying influences.

The supply of farm products is a definite price factor but at different times different conceptions of it are operative. The ruling consideration in the minds of the buyers and sellers at the wholesale markets may be the acreage planted, the condition of the growing crops, the visible supply

in existence, or the total production of the year. The supply may, moreover, be derived from the farms of the United States, or partly from those of foreign agricultural countries. It is, likewise, not the actual supply of the moment which solely governs the prices of farm products, but also the judgment of the buyers and sellers at the ruling central markets as to the probable supply of the future. Traders are continually discounting the future. Particularly is this the rule in the case of those commodities which are dealt in on well-organized exchanges and products which are not perishable.

Whatever the ruling conception of supply may be at a given moment it ultimately depends upon the total available production of the crops, and this has in most cases declined relative to the country's needs. Production in the United States is especially important, for the foreign supplies of the grains, meat, animals and wool were until recently protected by import duties. From the statistics of production presented in earlier chapters it may be seen that during the years of greatest price increase the number of cattle, hogs and sheep in the United States declined, and that prior to the year 1914 the crops of corn, wheat, barley, potatoes and wool increased less rapidly than the country's requirements. The crops of oats, rye, leaf tobacco, cotton and rice, on the other hand, continued to increase as compared with earlier years. It is significant that by far the greatest price advances occurred in the case of cattle and hogs, and that with the exception of cotton, prices advanced to the greatest extent in those crops where production made least headway.

A multitude of reasons for the reduced rate of and the actual falling off in the production of some of the great crops have been assigned—increased land values, the movement of population into the cities, higher farm wages, decreased efficiency of farm laborers and a general increase in cost of agricultural production, the relative absence of intensive farming in the United States, in some instances depleted fertility and inadequate use of fertilizers, in others the scarcity of available pastures, or in the wool trade the competition with foreign growers. Many special forces influencing production

were mentioned in the earlier chapters dealing with particular crops. Some writers attach particular importance to rainfall, long extended cycles of rainfall being traced.[1] These are to be distinguished from the direct effect of rainfall and other weather conditions, and of crop pests and livestock diseases upon the sudden advances or breaks in crop production, and consequently upon the sudden price fluctuations which often occur between crop seasons.

The direct bearing of supply upon the wholesale prices of farm products is seen in the eagerness with which buyers and sellers await crop and weather reports, and the immediate rise or decline of prices when unfavorable or favorable reports of this kind are received. It may also be seen in the statistics of production and prices.[2] In the absence of severe monetary stringency, war or other abnormal conditions, the prices of the great farm staples almost invariably rise when crops in the United States decline, and fall when crops increase.

Indeed the prices of no other group of commodities are so closely dependent upon the increase or decrease of the supply as are those of farm products, for with the exception of cotton and wool they are least subject to the influence of general business conditions. The wholesale prices of many manufactured articles and raw materials for use in manufacture frequently increase rather than decline when their supply increases because the production of such commodities is greatest when industry is prosperous and market conditions (demand) are favorable. When business is depressed the output of such products declines but their prices frequently fall rather than advance because market conditions are then unfavorable. The supply of farm products on the contrary is not similarly gauged in accordance with business prosperity, the aim of farmers invariably being the growth of a bumper crop.

It is impossible, however, to consider the effect of supply

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[1] H. L. Moore: Economic Cycles: Their Law and Cause, chaps. 2 and 3.

[2] *See* production and price statistics for years 1866 to 1911 in Moore: Economic Cycles, pp. 89 to 92.

upon the price of farm products without at the same time considering the demand for them. Prices may rise even when a bumper crop is produced, and decline when the crop is small as compared with the preceding year, should the market demand for farm products suddenly expand in the former or shrink in the latter case. Production may increase rapidly but if at the same time there is an even greater growth in the demand for farm products their prices will advance. In 1914, for example, large crops of grain were raised in the United States and grain prices would normally have been lower than in the preceding year, yet record prices ruled largely because the outbreak of the European War created an unusual demand for American grains and flour. Similarly cotton production gradually increased after 1896, yet after 1902 cotton prices were higher than during the preceding twelve years, chiefly because the textile industries alike in the United States and abroad were rapidly expanding and created a demand which until the outbreak of the European War, with its depressing effects upon European textile mills, maintained the average price of raw cotton above ten cents per pound.

The market demand for the farm crops cannot be concretely expressed in the form of bushels, bales or pounds, but it is nevertheless a very definite price factor dependent upon definite present or expected market conditions. Movements of population from the country to the city, the growth of population at home and abroad, the expansion or shrinkage of food requirements in food-importing countries, the development of the world's cotton and woolen mills, foreign tariff rates and inspection regulations, widespread wars which affect the demand for as well as the supply of the world's farm products, the state of business prosperity or depression, and the increasing or decreasing purchasing power of American and foreign consumers—all of these considerations which variously affect the market demand for farm products are considered by the army of buyers and sellers whose bids and offers determine wholesale prices. As in the case of supply or production, the market demand for farm products is judged both from the standpoint of the present and of the future. The relation

between supply and demand is constantly being discounted in the great wholesale markets.

The increase of gold production and the changing relation between supply and demand have been principally responsible for the increase in the general level of prices and for most of the special variations which have occurred in the wholesale prices of farm products. There are other factors, however, some of which bear an important relation to wholesale prices.

**3. Speculation in Farm Products.**—Ordinarily there are several conceptions of produce speculation—one referring to the practice of purchasing or holding farm products for a future rise in spot prices, a second to the making of contracts calling for the delivery or acceptance of spot produce at an agreed future time and price, and a third to the purchase and sale of "futures" on the speculative exchange. The first two forms of speculation are not confined to the wholesale markets, even the farmers not infrequently discounting or speculating on the future in these ways, and they are not confined to the trade in farm products. Such speculation is part and parcel of the process of fixing the wholesale prices of farm products in accordance with supply and demand. As was formerly stated the supply which determines prices is not alone the amount which reaches the markets at the moment, but also the total available crop and the probable supply of the future as shown by reports on acreage, crop conditions and weather influences, and the demand which determines prices is likewise dependent upon probable future as well as present conditions. Such speculation is universal and its effect is not artificially to advance or depress prices but to adjust them in strict accordance with the conditions of supply and demand as judged by the trade. It tends to eliminate sharp fluctuations throughout the year and to base prices upon probable future as well as upon present conditions, rather than to arbitrarily raise or lower prices.

It is against the third form of speculation, the dealing in cotton and grain "futures" on the speculative exchanges—that the charge of being an arbitrary price factor is most fre-

quently made. The effects of this so-called organized speculation upon spot prices has been more fully discussed in Chapter VII. Briefly summarized its usual effects are not to arbitrarily raise or reduce the level of spot prices at the wholesale markets, but (1) to fully discount the future and thereby reach the level warranted by fundamental conditions sooner than it would otherwise be reached; (2) to steady prices; (3) to enforce, so far as possible a world price for cotton and the speculative grains; and (4) to reduce the margin between wholesale prices and the prices received by the farmers or paid by millers, spinners or other consumers.

While these are the normal effects of organized speculation it sometimes exerts a temporary influence upon spot prices not warranted by actual conditions of supply and demand. Usually, however, the manipulation, corners and similar practices here referred to are the result of produce gambling rather than of legitimate speculation.

**4. Manipulation and Corners.**—While produce speculators ordinarily endeavor to profit by the skillful forecasting of natural market conditions, a gambling element sometimes is able to temporarily manipulate the price of "futures" artificially, and since spot and future prices are interrelated such manipulation may artificially inflate or depress the wholesale prices of cotton and grain. That its effects, however, are temporary has been repeatedly shown by the refusal of spot prices to blindly follow unduly inflated or depressed "future" prices.

Corners likewise affect prices differently than legitimate speculation, their intent being to compel the payment of inflated prices. Real corners of actual grain, cotton or other farm crops, however, are fortunately rarely attempted because the probabilities of failure are great and the amount of capital required stupendous. Speculative corners, consisting in the cornering of the futures maturing in a particular month, occur more frequently and are more readily carried out, but their price effects are short-lived because the victims make speedy settlement. Spot prices in the central markets of the United States as a whole, moreover, do not follow the inflated

prices at which the futures of a particular month may sell during a speculative corner. The price effects of such a corner are limited alike in extent and time. Its evils lie chiefly in the losses of the victims who are "caught short" and in the resulting mismanagement of legitimate hedging transactions.

**5. Combination and Consolidation.**—Though it is charged at times that the rise of prices in the United States is due to the exercise of monopoly power by combinations of producers, the influence of such combination upon the wholesale prices of farm products has never been of widespread importance. Many coöperative associations of grain, fruit, vegetables and livestock growers have been formed, but their primary price influence has been upon growers' local prices and upon growers' profits rather than upon the wholesale prices paid in the central markets. They have at times instilled competition into the local markets and they have enabled many growers to ship direct to the central markets, but they do not possess a monopoly power over wholesale prices and make no serious effort to inflate prices by withholding their crops from the market. Even the coöperative fruit exchanges which direct the shipment of fresh fruit have thus far endeavored to increase their members' profits by reducing distribution costs and gathering accurate information as to market needs rather than by endeavoring to dictate wholesale prices. Coöperative wool marketing has likewise had relatively little effect upon the prices paid at the leading central wool markets.

The growers' unions which have sprung up in the cotton and leaf tobacco trades have, at times, had a somewhat greater influence on wholesale prices. The cotton unions have sometimes urged their members to adhere to suggested prices, to store their crop, restrict the output of cotton, and sell through coöperative warehouses. Their effect on wholesale cotton prices has sometimes been appreciable,[1] but has on the whole been of relatively minor importance and has never approached that of monopoly power. The cotton unions have been most active in years of declining prices and have endeavored to prevent severe depressions rather than to force

[1] *See* chap. v, p. 108.

the payment of increased prices. The leaf tobacco growers' associations of the southern states exerted an important influence over prices during the years 1904 to 1908 when by storing their crops and restricting acreage they compelled the large tobacco manufacturers and exporters to pay a higher level of prices.

While the increase in the prices of farm products has on the whole not been caused by growers' combinations, it is also true that few of them have suffered from combinations of buyers or industrial consolidations. There are no combinations of grain, cotton, wool, fruit or produce buyers or dealers and no flour, cotton, or woolen textile mill consolidations with a monopoly power sufficiently strong to permanently depress the prices ruling in the wholesale markets. All of these industries and trades are competitive. The presence of a limited number of large meat-packing concerns at the central livestock markets of the West greatly reduces the amount of competition at these markets, yet it is significant that wholesale prices of livestock have advanced to a greater extent than those of grain or cotton. Leaf tobacco prices are the only important exception to the general rule that wholesale prices of farm products have not been seriously depressed by the restriction of competition. The leaf tobacco prices of the years 1899 to 1903 were unduly low, partly because the growth of the so-called "tobacco trust" diminished the competition among buyers.

**6. Cold Storage.**—The storage of fruits, eggs, dairy products and many varieties of farm produce in cold storage warehouses has become an important price factor in that it levels the prices of such perishable commodities from one season to another. The storage of eggs, for example, creates a much increased market in the spring months when vast numbers of eggs especially suited to storage are produced, and consequently keeps their price level above what it would otherwise be. These cold storage eggs are gradually placed on the market during the summer and winter months, when the supply of fresh eggs is insufficient to meet requirements, and consequently keep the level of prices during these months

lower than it would otherwise be. Since perishable farm products are seldom held in the cold storage warehouses longer than from one producing season to the next, even in those states where statutes limiting such storage to a definite period have not been enacted, it would seem that cold storage has not increased the average price of such commodities throughout the year but has tended to reduce fluctuations between seasons and greatly increase both production and consumption. There is no convincing evidence that the increase in the prices of perishable farm products since 1896 was caused by the cold storage industry.

**7. Transportation Charges.**—Railroad freight rates influence the wholesale prices of farm products in various ways. (a) They frequently constitute an appreciable percentage of the total prices paid at the central markets, but their importance in this respect varies widely as between particular commodities and markets. Rates on grain, hay, fruit, vegetables and eggs, for example, usually are important price factors, while those on cotton, leaf tobacco and livestock constitute but a small proportion of the prices realized at the central markets. The difference is in most instances due chiefly to the relatively low intrinsic value of the former group of products as compared with their bulk, and to the relatively high intrinsic value of the latter group. A rate of from 8 to 15 cents per 100 pounds of grain shipped from the West to New York, for instance, constitutes an important percentage of the New York price for a bushel of wheat or corn, but rates ranging from 25 to 55 cents per 100 pounds of cotton shipped from the larger central markets of the South to Boston constitute but a small fraction of the price paid for one pound of cotton. The entire railroad rate, however, is not always included in the wholesale price for farm products, for when large quantities move over water or rail-water routes, the higher all-rail rates can be included in the price only in part.

What has been said in connection with railroad freight charges applies also to ocean freight charges. Ocean freight rates are usually reflected in the difference between prices

in the central markets of the United States and foreign countries, but since many foreign markets obtain their supply of farm products only partly from the United States and the rates from all American shipping points are not uniform, the entire freight charge is not at all times reflected in price differences. There is, moreover, no uniform rule as to the incidence of export freight charges. The extent to which they are ultimately paid by the American exporter or producer or by the foreign purchaser depends largely upon their relative needs and varies at different times. In the case of agricultural exports the greatest portion of them is usually shifted to the foreign buyer either directly or in the prices paid by him, but when conditions of supply and demand are unfavorable to the United States the proportion paid by foreign buyers declines.

(b) Freight rates are also responsible for a portion of the difference between the prices ruling at one central market as compared with another. Thus, the grain prices at the seaboard markets are higher than those at the primary markets and the prices at the various primary markets differ somewhat, partly because of differing freight charges.[1]

(c) A general increase or decrease of freight charges on a given farm product is reflected in its prices. Freight charges were not, however, the cause of the increase in prices since 1896, for it is only recently that the rates of the eastern trunk lines have been generally increased. The general level of freight rates declined until 1899-1900 and then remained practically stationary until the decision of the 5 per cent. rate case in 1914. There were individual changes prior to this decision, but not in sufficient numbers to affect the wholesale prices of farm products except at individual points. Individual rate increases differ from general increases in that they frequently affect the profits of buyers or sellers rather than wholesale prices.

Railroad freight charges do not consist solely of freight rates, but also of special charges such as those which are at times paid for switching, storage and demurrage, loading and

[1] *See* chap. iv, p. 91.

unloading, elevator services, in-transit privileges, cotton com pression, spotting cars, reconsignment and refrigeration. Th practice of the carriers regarding most of these charges varie greatly. They may be absorbed by the carriers or shifted t the shipper; many special services may be performed free o charge at some points although subjected to charges at others and when special charges are collected there is no uniformit as to their amounts. Since wholesale markets and individua dealers are in many cases in competition with each other ther is no general rule as to the inclusion of these charges in whole sale prices. They are added in many instances, but at time their principal effect is upon the profits of the individua buyers or sellers from whom they are collected by the car riers.

**8. Commercial Costs.**—The price effects of the trade costs incurred at the central markets such as commission or broker age, insurance, inspection and grading, weighing, storage yardage and feeding costs, are similar to those of freight charges. In so far as they are general in a given trade they are in part reflected in the general level of prices. Storage charges incurred at the primary markets, for example, usu ally have a direct bearing upon grain prices in the later as compared with the earlier months of the crop season. The entrance of more dominant forces may, however, prevent the inclusion of such charges in prices. The extent to which they are reflected in the wholesale prices of farm products or are shifted so as to come directly out of the profits of local shippers or of the buyers and sellers at the central markets varies from time to time and at different markets.

**9. American Import Duties.**—The recent increase in the wholesale prices of farm products was not directly due to the imposition of protective import duties, for these duties have not been increased since the enactment of the Dingley Act of 1897. With the exception of temporary interruptions the policy of protecting farm products was one of long standing and prevailed during many periods of declining as well as of advancing prices.

It is claimed, however, that by restricting imports the

high duties on many farm products restricted the available supply and indirectly caused prices to increase. It is only in this indirect way that there could be any relation between the tariff on farm products and the recent advance in their prices. This possible effect of import duties, however, is greatly diminished in the case of many agricultural commodities. The protective rates on grain, meat animals, meat products and eggs throughout the earlier years of their existence and until after the close of the nineteenth century had practically no effect upon prices in the United States, for the production of a huge domestic surplus and the practical absence of large outside sources of supply made the importation of these products, even had they been on the free list, entirely improbable. Small quantities were imported in later years, yet the amounts imported even after the removal of the duties in 1913 have thus far been too small to affect prices throughout the United States. The effect of the tariff on the prices of fruits, domestic leaf tobacco and dairy products has also been restricted, because the importation has been confined mainly, although not entirely, to special varieties not produced on a large scale in the United States and has always been small in comparison with the huge domestic output.

The price effects of the tariff on imported wool and sugar have been greater, because these commodities come into more direct competition with the domestic products of the United States.[1] The protection granted to manufacturing industries may also have had an indirect effect upon the prices of farm products in that they created a larger home demand for raw materials and foodstuffs by promoting home industries and the growth of a large industrial population.

The price effects of the tariff rates at the present time and in the near future are conjectural because conditions have been abnormally disturbed by the European War. The Act of 1913, which is now in effect, will maintain the prices of domestic farm products even less than they were maintained by previous acts because it places grain, flour, livestock, meats

[1] *See* chap. xii, p. 207.

and wool on the free list, reduces the rates on sugar and pro vides for its reversion to the free list on May 1, 1916; reduce the rates on leaf tobacco and fruits; and generally "revise downward" the rates on manufactures.

**10. General Business Conditions.**—One of the striking differences between farm commodities and raw "producer materials" or manufactures is that the prices of many of the former are less dependent upon general business prosperity than those of the latter. Raw cotton and wool are important exceptions because the demand for them depends directly upon the operation of the world's mills. The prices of the great food crops, however, and of leaf tobacco are influenced to a much smaller extent by industrial depression or prosperity, for food is a necessity and only the most dire depression greatly reduces the consumption of tobacco.

Yet even the prices of foodstuffs are influenced somewhat by general business conditions. Industrial depression may so reduce the purchasing power of many consumers as to shift their demand from the more to the less expensive foods and cause them to practice food economies. Industrial prosperity on the contrary stimulates wastefulness, careless buying and an abnormal demand for high-grade foods. Business depression may, moreover, be accompanied by a severe financial panic during which the dealers who usually accept almost unlimited quantities of the great farm staples are unable to finance their transactions. During the crop-moving season of 1907 the price of grain suffered an abrupt temporary decline because of the severe "money panic" which caused a shortage of crop-moving funds.

## Growers' Local Prices

The prices received by the growers of farm products sold in local markets are based directly upon the ruling wholesale prices of the central markets to which they are shipped by the local buyers. They are consequently subject to all the price influences which determine the central market prices, with the

exception that they fluctuate less frequently. They do not follow the central market prices with absolute precision, they are not subject to all the myriad of fluctuations which occur in the central markets throughout each business day; but every long extended advance or decline and every daily price change is reflected in the local markets, and in case of substantial price changes at the central markets, local buyers may readjust their prices several times in a single day. This relationship between local and central market prices is particularly close in the grain and cotton trades because the purchasing and distribution organization in these trades has been developed to a high point of efficiency. It is somewhat less close in the local livestock, wool, leaf tobacco, fruit, produce and other agricultural trades, but the local prices of these commodities are nevertheless based primarily upon the wholesale prices prevailing in the great central markets.

In basing local prices upon central market prices, various deductions are made, the most important being (1) freight charges incurred in shipping the products to the central markets, (2) operating costs of the local buyers including wages, insurance, weighing, inspection and cartage, (3) interest, rents, and any other local capital costs, and (4) an additional amount to yield a profit. Local grain buyers usually deduct from the primary market prices the freight charges incurred plus an additional number of cents per bushel to cover all other costs and yield a profit.[1] The local cotton buyers of the large exporting or cotton brokerage concerns frequently are supplied with so-called "limits" which they deduct or add to the price at which cotton "futures" are selling on the New York, New Orleans or Liverpool exchanges.[2] The methods of making the deductions from the central spot or contract prices varies, but the practice of basing local prices upon central market prices is the general rule except in unimportant local markets which have no regular trade connection with the outside world.

The amounts deducted from the central market prices are

[1] *See* chap. iii, pp. 39, 40.

[2] *See* chap. v, pp. 111, 112.

not absolutely inflexible, for they are to some extent subject to *local influences*. In the local grain trade, for example, the number of cents per bushel deducted in addition to freight charges at a given local market is influenced in part by the amount of competition between local buyers, the presence of a coöperative farmers' elevator, the ability of farmers to sell in a nearby rival market, the extent to which certain farmers are holding their grain in storage, and the intelligence of the farming community. Local buyers desire the maximum profit, but local influences affect the allowance for profit which they are able to include in the amount subtracted from the central market price.

The growers' *cost of production* does not directly determine the prices of the great farm staples, because the farmers do not determine the prices which they receive. Their position is radically different from that of the huge industrial concerns some of which possess sufficient monopoly power to control in a large measure the prices which they receive for their wares. Agricultural prices are competitive, and are therefore influenced by the growers' costs of production only *indirectly* in that the failure to pay the farmers profitable prices will affect the amount of given products produced by them. Prices may fall below the cost basis temporarily and even for a succession of seasons, but low prices in the long run affect production or supply by causing reduced acreage or a shift from one crop to another.

## Retail Prices

Many of the principal agricultural commodities are not retailed in their crude condition and consequently retail prices are not regularly quoted except on the finished products into which they are converted.[1] It is not intended to describe fully the manner in which the retail prices of these finished products are determined for they are more appropriately included in a volume dealing with the trade in manufactures.

Some farm products, however, such as fruit, vegetables

[1] *See* p. 16.

and produce, dairy products, poultry, corn and oats, hay and straw are more commonly sold in the retail markets. Their retail prices are based primarily upon the wholesale prices of the central markets, various costs and an allowance for profit being added to the latter instead of being subtracted as in the case of growers' local prices. The retail costs which are so added include items such as interest and rents, retail selling expenses, insurance, delivery costs, and losses resulting from the decay of perishable products or insufficient demand for those of inferior quality.

The computation is not, however, as exact as in the case of growers' prices because the retail costs incurred as well as the profits desired are in many instances interwoven with the aggregate costs and profits resulting from the handling of a large variety of other goods retailed in the same store.

The retail prices of farm products are also affected by local or *special influences*. The keenness of retail competition, for example, affects the allowance for profit which can be added to the wholesale price in a given retail market. Differences in the purchasing power of retail customers, moreover, may cause retail price variations between different cities or even between different sections of the same city. While the wholesale or central market prices throughout the United States fluctuate in relatively close harmony, there are no nation-wide retail prices of farm products. The margin between retail and wholesale prices of farm products varies to an amazing degree and the extent to which retail prices have advanced varies widely in different parts of the country. The United States Bureau of Labor Statistics reports, for example, that the retail prices of potatoes in 1913 were 45.1 per cent. above the average for the decade 1890-1899 in the North Atlantic States, as compared with 46.1 per cent. in the South Atlantic states, 48.7 per cent. in the North Central states, 49.1 per cent. in the South Central states, and 99.4 per cent. in the Western states; and that the retail prices of poultry in these geographical divisions advanced 67.4 per cent., 59.5 per cent., 92.1 per cent., 87.6 per cent. and 34.9 per cent. respectively.

The retail prices of crude farm products sometimes lag behind their wholesale prices temporarily, because the keen competition between the retailers may induce some of them to continue existing prices until stocks on hand are disposed of even though wholesale prices have meanwhile risen. It also happens at times that when the retail prices are raised they undergo a greater advance than the wholesale prices upon which they are based. The retail prices of fresh eggs in 1913, for example, as reported by the United States Bureau of Labor Statistics, were 74.8 per cent. above the average for the decade 1890 to 1899, while the wholesale prices during the same period advanced 66.5 per cent.; and the retail and wholesale prices of milk advanced 40.2 per cent. and 38.4 per cent. and of creamery butter 53.2 per cent. and about 42 per cent. respectively. The bureau reported the average retail prices of the fifteen principal foodstuffs, crude and prepared, to have advanced 67 per cent. as compared with an increase of 37.1 per cent. in the average wholesale prices of foods.[1]

The greater relative advance in retail prices was due principally to the increase in rents and in retail selling and delivery costs. Retail costs were especially affected by the growing practice of selling and delivering small lots. The entire system of retailing through small retail stores—appalling in number—has, moreover, proved expensive to the consumers. It has occasioned a wasteful duplication of facilities and selling forces, and a margin between retail and wholesale prices sufficiently wide to provide a livelihood for a multitude of retailers each of whom, with some exceptions, is dependent upon a limited number of customers. While wholesale dealers of New York and Philadelphia usually add from 5 to 11 per cent. to the prices which they pay for agricultural food products the average amount added to the wholesale dealers' prices by the retail trade is reported to be at least 33 ¼ per cent. in the former and 45 per cent. in the latter market.[2]

[1] Wholesale index number included from 53 to 57 foods.

[2] *The Annals of the American Academy of Political and Social Science*, July, 1913, pp. 151 and 205. For statistics of price margins *see* references marked with an * in the accompanying bibliography.

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